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PROGNOSIS IN CHRONIC HEART DISEASE AS ADVERSELY AFFECTED BY CERTAIN MEDICAL TRADITIONS*

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Despite the astonishing achievements of the last thirty years in the study and solution of cardiovascular problems, we are still acting for the most part on obsolete principles of therapeutic initiative.

It is doubtless impossible to maintain the ideal balance and relationship between research on the one hand, and diagnosis, prophylaxis, therapy and prognosis on the other. Unscientific pseudodiscoveries are promptly inflated, widely heralded and too often hastily adopted, whereas important isolated truths may lack general acceptance because of their publication in journals inaccessible to the great body of our profession and the less fervid propaganda of the scientific investigator who is often too deeply immersed in the individual problem to devote either time or attention to its possible points of contact and articulation. Frequent, periodic, systematic and authoritative reporting of the discoveries of modern medicine with well-considered suggestions as to their application to diagnosis, therapy and the prevention of disease, in a more complete and exhaustive way than is done by any existing year-book, would be invaluable to both general practitioner and specialist and enormously broaden and stimulate coordinate and productive research in the clinical field. Difficult above all is the task of establishing new rules of action when these traverse and run counter to a theory and practice so fixed by long usage as to have become traditional.

PROGRESS IN KNOWLEDGE OF THE HEART

We have now learned that heart-muscle is paramount in clinical cardiovascular problems even though valvular lesions, arteriosclerosis or pericardial inflammation be the more obvious and obtrusive elements in the given case.

A flood of light was thrown on the problems of the circulation when Gaskell formulated his myogenic theory, and his shrewd and experimentally buttressed assumption of an impulse-conducting bridge in the human heart has now become an accepted anatomic and physiologic fact through the discoveries of Kent and His the younger, amplified and reinforced by the work of Tawara, Keith, Flack, Aschoff and others, which has demonstrated the nodes of initial contraction and regulation in the wall of the right auricle at the confluence of three great venous rivers.

The modern conception of heart-muscle function rests on Gaskell's demonstration of the heart's potential autonomy as proved by the capacity of the individual fiber for stimulus production, reception, conduction, contraction and tonus, and this concept has so advanced our solution of vital circulatory problems as to render negligible the minor points yet at issue between the respective adherents of the neurogenic and myogenic doctrines. To these discoveries have been added the experiments of Merunowicz, Ringer, Loeb and Howell showing that the maintenance of cardiac rhythm depends on the presence and interaction of balanced solutions of certain metallic salts or their ions in the circulating blood.

The marvelously specialized muscle fibers of the heart are naked, freely anastomosing, so disposed and inserted as to make each fiber a constituent of both ventricular chambers and so attached as to afford the maximum of required contraction with the least expenditure of energy. Krehl, Ludwig and MacCallum have demonstrated the presence of a separate band surrounding and strongly supporting both mitral and aortic orifices.

H. P. Bowditch's law of "maximal contraction" and that of Marey relating to "the refractory period" have been sustained and amplified and play an important part in modern studies relating to rhythmia and cardiac reserve.

Engleman has formulated the influence affecting each of the functions of the cardiac muscle fibers. A host of observers have extended our knowledge of the nervous mechanism of the circulation, Hering has given us a new classification of the arhythmias, and Thomas Lewis has beautifully stated the scope and limitations of instrumental methods in clinical work.

Mackenzie has done yeoman service for the patient and practitioner by insisting on the closer observation and more rational interpretation of symptoms in heart-disease, has demonstrated unexpected values in the polygraphic record and with Cushny and Lewis has established the nature, importance and diagnostic signs of auricular fibrillation.

Contributions relating to residual blood and intramural pressures have proved of great value, and a new chapter in medicine has resulted from the introduction and ever-widening clinical employment of the sphygmomanometer, reinforced by the ingenious and promising auscultatory method of Korotkow and the introduction of accurate graphic records. The invaluable information thus obtained may now be supplemented by the apparatus of Eyster and Hooker for registering venous pressure, the determination of blood-viscosity by the apparatus of Dietermann, or of the total blood-volume by the method of Haldane.

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The *x*-ray has greatly extended its field and shown unexpected value in both experimental and clinical work. Through it we obtain heart-outlines, recognize the enlargements of individual chambers, detect aneurysm, and may even take kinematographic records or photograph the heart in single phases of its cycle.

Einthoven's string galvanometer (the electrocardiograph) records the rhythmic flow of the electric action currents of the heart through the deflections of an almost microscopic filament suspended between the poles of a magnet, and connected with the body of the patient. This thread is magnified and its movements photographed on a moving film, thus yielding a record of the stimuli preceding the contraction of the heart-chambers. Its possibilities are great, though as yet not fully developed, and it has already taken its place among the diagnostic instruments of precision of the hospital clinic and the laboratory.

Among the modern miracles of refined method is the registration of heart-action by Meara and Crehore's method of light interference rings and the success of Joachim and Weiss and of Ohm in photographing both heart-sounds and murmurs.

Esophago-atriography is the name given to the making of graphic records (esophago-atriograms) of the left auricular contraction by means of Rautenbach's, or Monkowski's esophageal bulb. Janowski not only secures simultaneously records from both right and left auricles by means of the venous pulse and the esophageal bulb, but by using a modification of the turgosphygmograph of Strauss, can add a record of the heart-sounds.

I cannot now do more than thus suggest by these few references the astonishing activity of the investigator in this department of medicine, nor even touch on the wealth of clinical and pathologic contributions of great direct and indirect value.

PERSISTENCE OF OLD IDEAS

Despite this progress we for the most part hold to our traditions in relation to prophylaxis and treatment, and hence fail to secure that longer lifetime for the victim of chronic heart-disease to which he is clearly entitled.

It would seem that this fact depends chiefly on:

1. Our traditional fear of so-called "meddlesome interference," combined with either a dangerous and statistically unwarranted optimism on the one hand or a no less extreme and equally dangerous pessimism on the other, with relation to the after-lifetime of these patients.

2. A traditional disregard of subjective symptoms and a consequent failure to classify, group and articulate with physical signs those subjective expressions of minor cardiovascular insufficiency of the utmost importance in diagnosis and treatment.

3. A widely prevalent misconception of the nature of so-called compensation and its adequacy as a protective agency.

4. Our consequent failure to come to the relief of the heart at the time when therapeutic interference is most valuable to the patient in relation to his after-lifetime.

5. An unreadiness to recognize and apply such means of prevention as have been placed in our hands.

6. A general tendency to neglect chronic ailments and chronic heart-disease in particular.

OUTLINE FOR A REVISION OF IDEAS

I believe that we should act on diametrically opposite principles, namely, that:

1. While deprecating the treatment of hearts merely because arhythmia or murmurs are present, we should nevertheless realize that we cannot harm any patient by administering a few doses of digitalis or any other appropriate drug, by temporary physical rest or by regulated exercise.

2. The therapeutic test is not only useful in our analysis of the cardiac arhythmias but is often an indispensable aid to the early diagnosis of those lesser cardiac insufficiencies which attest a struggling heart and should be dealt with wherever and whenever encountered.

3. With a broader conception and better knowledge of the subjective symptoms of cardiac insufficiency we are not only justified in timely therapeutic interference, but constrained to exercise that closer supervision and control necessary to conserve and prolong the life of the patient.

4. We should recognize the fact that so-called perfect compensation never exists, save in the mechanical sense of an adjustment of circulatory equilibrium; that dilatation is the primary change in valvular lesions; that hypertrophy is slowly produced, never concentric but always associated with varying degrees of dilatation to which must too often be added a progressive degeneration of the heart-muscle and a defective coronary circulation.

5. So-called compensatory cardiac changes are adaptive rather than truly compensatory, and physician and patient alike are chiefly concerned with the margin of heart-muscle response.

6. The incidence of heart-disease may be largely reduced by the practical application of modern views relating to the etiology, diagnosis and treatment of those infections chiefly responsible for endocarditis, myocarditis and the vascular degenerations.

7. Of the entire domain of medicine chronic disease offers the most grateful field for the exercise of the specialist and research worker.

8. Chronic sufferers endure a sum-total of deprivation and suffering infinitely greater than that entailed by acute conditions, whether medical or surgical; and finally chronic heart-disease even though it be incurable is wonderfully responsive to timely and well-directed effort.

9. The average after-lifetime of the patient having heart-disease may be long or short according to the nature of his lesion and the interaction of so many personal factors as to render each case a matter of individualization. Individual examples of long life justify encouragement of the patient but must not deceive the physician as to the average life expectation of cardiac cases as determined by the recorded and tabulated experience of life-insurance companies.

CARDIAC INSUFFICIENCY

Five years ago I observed that an apparent splitting of the second heart-tone, as heard over the third left intercostal space near the sternum, seemed to represent the earliest recognizable sign of aortic insufficiency occurring in men above 40, and that it was usually, though not invariably associated with a history of acute heart-strain, which initiated a series of most interesting and misleading subjective symptoms. As is usually the case after an initial observation, such instances have multiplied and I now have a considerable number under observation and have been able to follow closely certain of the curiously instructive phases of the early lesion. The split second sound is usually inaudible at any point removed from the immediate vicinity of the third left sternochondral junction or third left interspace near the sternum. It has in nearly every case alter-

nated later with a distinct but atypically short diastolic murmur, which has tended to become established as a persistent murmur or, as has happened in three instances, entirely disappear.

A capillary pulse has invariably been present, usually varying directly in intensity with the auscultatory phenomena, together with a radial pulse of the modified Corrigan type showing the decided but peculiar differences between systolic and diastolic readings characteristic of aortic incompetence in middle-aged individuals.

The heart-outline in these walking patients as developed by percussion and checked by the *x*-ray examination has invariably been distinctly large and of the aortic type, but any decided clinical signs of hypertrophy have been lacking over long periods. On the contrary, recession of the border under cardiac stimulation and physical rest has been prompt, definite and decided; and in three cases of a similar type in younger individuals abnormal sounds have entirely disappeared under such measures and the heart has nearly or quite resumed a normal outline. In an elderly patient with interstitial nephritis and high arterial tension, who has carried for at least ten years a relative mitral insufficiency, an aortic lesion of this type has been evident at times for the past two years, varying from the definite murmur of a relative aortic insufficiency to a split second tone or a mere impurity. Coincident dilatation and excessive blood-pressure seem to initiate his more decided manifestations.

Equally interesting and more important from my point of view are the subjective symptoms observed in these cases. Although almost without exception men of good or even athletic build, several presented the mental and nervous symptoms of so-called "neurasthenia" and had previously been treated accordingly. Nearly all complained of nervous irritability, disturbed sleep, precordial and epigastric oppression or actual pain, various gastric disturbances and lassitude or easily induced fatigue. The prompt amelioration or complete removal of symptoms following treatment directed wholly to the heart has been illuminating.

This particular group of cases has yielded clinical evidence of two cardinal and fundamental facts, namely:

1. Even in what is probably the slightest recognizable degree of aortic insufficiency dilatation occurs to a sufficient extent to produce subjective symptoms and a definite and characteristic increase in the cardiac area without a clinically recognizable hypertrophy.

2. With only a split second tone of extremely limited audibility and no definite murmur, an adherence to the traditional disregard of subjective symptoms would prevent a correct diagnosis in the absence of marked dilatation. Certain of these symptoms were unquestionably those of cardiac weakness.

I may say that no examples of the normal heart of excessive size have ever come under my observation at post-mortem, nor can I believe that the weight-differences established by the pathologist for normal hearts can result in an outline which exceeds the maximum percussion boundaries recently established orthodiagraphically by Dietlen. On the other hand, I find that many dilated hearts are regarded as normal in size because of a disregard of the law of proportionate weights, of the peculiarities of body structure and of the conformation of the individual.

I have been deeply interested in the study of another group of patients showing predominant subjective manifestations together with clearly defined evidences of either cardiac dilatation or ready dilatability. The condition seems to correspond to what Mackenzie calls the X disease. His extended and clever description is precisely that of a common type of so-called "passive neurasthenia," but the physical and mental characteristics are in all respects such as to permit one to replace the sign of the unknown quantity by the term "chronic congenital asthenia," that composite ailment of which Berthold Stiller, of Budapest, has drawn so clear and vivid a picture. In the absence of dilatation these patients have usually a misleadingly small and narrow, low-lying heart (the *tropfenform Herz)*, and there is usually an associated arterial hypoplasia and marked vasomotor instability.

The heart-muscle and vessels are alike singularly deficient in tonus, and the readiness and frequency with which minor dilatation occurs, with or without murmurs of a peculiarly transitory and evanescent character, is a most striking clinical phenomenon to which Stiller apparently has paid no attention. These murmurs are systolic and may be mitral, tricuspid or pulmonary in type, and the latter two are usually ascribed to anemia, though in such cases they may and often do occur in its absence or tend to persist or recur after any existing initial anemia is relieved.

These cases present diverse subjective symptoms many of which are directly dependent on the cardiac weakness and more or less continuous overstrain, as may be readily proved by properly directed treatment. In addition they show a wealth of subjective symptoms resulting from their structural deficiencies, their chronic tendency to subnutrition and the congenital muscular weakness and relaxation, which as manifested by uterine displacements, loose kidneys, gastroptosis, kinks and the like, have afforded a large, though usually a thankless field for surgical enterprise.

In this connection I venture to express the hope that "neurasthenia" as a descriptive name for a supposedly concrete ailment will soon drop out of medical literature, or be confined to the extremely few cases left without a more definite assignment under modern diagnostic methods. It served a useful purpose as did the term "heart-failure" in the days of less accurate diagnosis, but of all names in the medical dictionary it seems to me to be at this time the most obscuring and misleading and least truly descriptive. If we deduct the cases of demonstrable visceral lesions, of incipient insanity, chronic congenital asthenia, hyperthyroidism and larval syphilis from the "neurasthenic group," the remainder will closely approximate zero.

Fortunately the "rest cure" so widely and effectively employed exactly suits the needs of the asthenic from the standpoint both of nutrition and of cardiac muscle tone, as indeed it applies to a vast number of other chronic diseases.

Such cases as are included in the two groups just described, namely, those of early aortic incompetence and those of chronic congenital asthenia with weakened hearts, seem to me to throw a flood of light on the subjective manifestations of cardiac insufficiency of the minor grades.

It is a fundamental and damaging error to assume that one must await the onset of pulmonary or renal congestion, hepatic engorgement, marked dyspnea, ascending edema and flagrant and obtrusive dilatation before feeling justified in active therapeutic interference in heart-disease. Yet these are the signs of "incompensation" as given by every text-book. These major symptoms represent the expression of extreme cardiac weakness and, fortunately for the patient, often serve at

once as danger signals and emergency brakes; but they ought not to determine therapeutic initiative.

The history of any chronic lesion is rather one of adaptation than of true compensation. The nature, site and severity of the lesion varies widely in different affections, but each and all diminish the radius of cardiac response, i. e., they diminish cardiac reserve.

Crippling valvular lesions, progressive myocardial degenerations, sclerosis of the coronary arteries or of the entire vascular system, high arterial tension and the like, embarrass and hamper the intricate and delicate mechanism of the entire circulation and tend constantly or intermittently to force the heart to a degree both damaging and dangerous.

If one assumes as an example the production of aortic leakage, one finds primarily a dilatation of the left ventricle, limited and constantly resisted by muscle tonus and contractility, and usually by an increased frequency calculated to lessen the load per heart-beat. Hypertrophy follows and after a variable period, in young hearts at least, the increase of muscle and the dilatation limiting tonus establish a circulatory equilibrium with diminished field of cardiac response and constantly progressing damage in the vascular field, and we say that "the lesion is compensated." So wonderful is this adaptive change that for years a man may pursue a laborious occupation without serious breaks in this circulatory equilibrium, but he may and often does break down suddenly under some unusual physical strain no greater, less perhaps, than that of his daily labor, to the peculiar strains and vicissitudes of which cardiac and skeletal muscles alike have become trained and habituated. His cardiac muscle strength is temporarily increased but his reserve is impaired. Year by year the margin of relative safety for such patients diminishes under the effects of abnormal pressure, the toxins of fatigue, disturbed metabolism, the constantly impaired and ever-diminishing coronary blood-supply, and the almost invariable progressive cardiovascular degeneration.

Certain decompensatory factors are common to all valvular and myocardial lesions and the chief of these are muscle-strain, diminishing tonus with increase of dilatation and dilatability, progressive fatigue and again the constant contraction of the field of cardiac response. It is incredible that we should receive no suggestive signals other than the obtrusive symptoms of the later stages of decompensation. Any muscle in the body may give rise to manifestations varying from mere subjective discomfort to agonizing pain when forced to continuous maximal labor under conditions of excessive strain and fatigue. We have the reports of forced marches, the records of various long-distance contests, as well as the histories of acute heart-strain in patients to attest this fact. Our clinical interest must then be chiefly directed to the lesser painful or distressing manifestations of cardiac fatigue and overstrain and the regions to which these may be referred.

Many other factors diminish the tonus and contractile power and in varying degree the other functions of the heart-muscle until accustomed use, and later mere living, involves serious overstrain. Long before this crisis is reached, from time to time the struggling heart cries out for relief. This cry varies somewhat in different lesions but may take the form of pain or find expression in mere discomfort, pressure, constriction, subjective dyspnea, a persistently quickened pulse, anorexia, disturbed sleep, bad dreams, an overwrought mental and nervous condition, lassitude, weakness or even syncopal attacks.

Alexander Lambert has recently directed attention to the work of Henry Head, Sherrington, Mackenzie and others which shows that despite the insensitiveness of the heart itself painful sensations having their source in cardiac embarrassment may be referred to the chest-wall, axilla, neck, shoulders, inner aspect of arm, epigastrium and even the right and left hypochondrium. The auricles refer their pain to the lower axilla and shoulders; the ventricles to the chest-wall, epigastrium, inner aspect of the upper arm, ulnar surface of the forearm and the wrist. Pain from the ascending aorta may be referred to the entire neck, including the occiput. Mackenzie reports a case of major angina in which the gums were painful.

With such a wide area of distribution for cardiac pain, and granting the logical assumption that various sensations of discomfort may substitute pain in cardiac overstrain and fatigue as in like conditions affecting any other muscle, we see the importance of many axillary, neck, shoulder, thoracic and upper abdominal referred pains or uncomfortable sensations such as are generally given the more obvious interpretation suggested by their surface relation to underlying tissues. Many a patient with chronic myocarditis or coronary sclerosis and a struggling heart has been confidently but vainly explored for gall-stones or gastric ulcer under a not unnatural misinterpretation of referred cardiac pain.

We must certainly revise our ideas also in relation to many of the less painful seizures and the minor discomforts occurring in the upper abdominal zone. In the case of the elderly patient especially we should reverse the traditional rule, and instead of considering first the stomach when he complains of his heart, look rather to his heart when he complains of his stomach.

The subjective symptoms of heart-disease are many and varied and few are peculiar to cardiac disease, but the fundamental factors in their interpretation are: 1. The relation of their onset to concurrent or precedent physical exertion. 2. Their association with the lesser grades of dilatation. 3. Especially in the case of the middle-aged patients and to a less degree in younger persons, their relation to excitement or emotional strain. 4. Their response and that of the cardiac outline, when this is increased, to cardiac stimulation with or without physical rest or regulated exercise.

Variations in rhythm are often of great importance especially in persons above 30 years of age, but afford too large a field for present discussion. Auricular fibrillation, extrasystolic manifestations and various grades of heart-block are of chief importance. Vagus influences are readily tested by the appropriate use of atropin on the one hand or of digitalis on the other. A persistently rapid or abnormally slow pulse, and the pulse which varies abnormally on a change of posture are helpful elements in diagnosis. Subjective dyspnea, diurnal or nocturnal even in the milder types, is a striking symptom of great value frequently ascribed to hysteria and persistently increased respiratory frequency is frequently overlooked in the absence of any complaint of dyspnea. Indeed, slight and transient edema is by no means so strikingly objective as to shield the careless observer from serious error especially if, as in several ambulatory cases observed by me, it is present only over the calves of the legs.

A sense of lassitude, easily induced fatigue, unexplainable drowsiness, lack of concentration and sustained application, mental confusion, heaviness of the legs and the wading sensation, together with disturbed sleep and subjective gastric disturbances of the most varied kinds,

are extremely common symptoms. In cases of insufficiency associated with high arterial tension, numbness and prickling of the lower extremities frequently occur, often being manifested only under the coincident increase of cardiac dilatation and increased arterial pressure, subsiding as these are relieved.

Harlow Brooks has shown both the rarity of classical angina pectoris, and the remarkable frequency of embarrassing or crippling grades of coronary sclerosis.

I have been struck by the frequency with which relatively mild precordial and epigastric anxiety, constriction, subjective dyspnea and the like, have been associated with a fear and a sense of impending dissolution quite beyond that referable to simple nervousness, and believe that in the light of recent reports this element should always indicate a careful investigation of the heart and blood-vessels as pointing to a minor but genuine angina. Again and again an attack of "hysteria" proves to be a beautifully accurate miniature of angina pectoris, and "pseudo-angina" is one of the most misleading and misused terms in medicine.

Hair-splitting differential diagnosis of the various forms of myocardial degeneration and a tendency to greatly overuse the term "chronic myocarditis" are giving way to a more rational tendency to use the former term, not to attempt the impossible, and with a proper realization of the value and importance of the specific lesion, to concentrate on the question of functional efficiency.

We have long sought, but never found, a direct and simple test of cardiac sufficiency. Even modern instruments of precision fail to supply this need to a degree at all commensurate with the time and training necessary to their intelligent use. The muscle-antagonism test of Herz, Gräupner's test or that of Katzenstein are alike uncertain and unreliable, but fortunately we may in most lesions detect cardiac weakness by the response of the subjective symptoms and the percussion area of the suspect to adequate doses of a cardiac stimulant with or without absolute rest.

As may readily be shown by *x*-ray control, serious error in skilfully applied percussion, though occasionally unavoidable, is far less frequent than is generally believed if one adheres to like conditions on the different occasions, outlines both borders, and substitutes a modern percussion method for the heavy flat-finger technic of former days.

In dilated hearts the shrinkage of outline is usually so marked and the lesser outline so well maintained under and following the therapeutic test as to be most illuminating, but as before stated many dilatations are overlooked by reason of the large variation accepted as within normal limits and too often applied without reference to the physical build of the individual.

One need hardly refer to the gross errors which occur when a variable landmark like the nipple replaces the measuring tape. Another aid is afforded by variations in the total daily urinary output, though this is too often misleading and requires careful control.

In respect to auscultation, one may venture to suggest the need of more careful attention to weak and impure sounds and abnormalities of accent, and a less exclusive concentration on actual murmurs.

PROPHYLAXIS

With relation to prophylaxis, much of the recent clinical and pathologic work is of extremely great value. Lesions of the aorta, aortic valves and the myocardium are far more commonly associated with syphilitic infection than we have formerly believed, which no doubt in large measure accounts for the relative rarity of aortic valvular lesions in childhood. It is evident also that the process is one of relatively early development as relating to the stage of the disease itself. Harlow Brooks, who has recently made an interesting report on cardiac syphilis, also emphasizes the extraordinary frequency with which a history of luetic infection is denied, as is proved by both autopsy findings and the results of the tests of Wassermann and Noguchi, now extended and simplified by the luetin test of the latter investigator. These facts emphasize the diagnostic and protective value of these tests, and the importance of prompt and intensive treatment.

Neither time nor space permits a general consideration of the prevention of arteriosclerosis, or of myocarditis in general, but I may say a word in relation to acute rheumatism and certain other infections producing endocarditis and myocarditis.

The onset and course of acute rheumatism have always suggested an acute infection of a modified septic type, and the relatively recent work of Poynton and Payne, Beattie, Ainley Walker, Beatson, Longcope and many other observers, has shown that a diplostreptococcus may be quite constantly recovered from the subsynovial areolar tissue of the inflamed joints of rheumatic patients, grown in pure culture and passed through a series of susceptible young animals in which it consistently produces an acute arthritis. It is recovered somewhat rarely from the blood, and with difficulty from the joint exudate, in both of which fluids it seems promptly to be destroyed, and in spite of its tendency to diplococcus arrangement in culture mediums represents probably a specific streptococcus strain not yet clearly differentiated. During the same period many reports have appeared relating to the portals of infection in rheumatism, among which the contributions of D. J. Davis of Chicago are notable.

The intimate relationship between rheumatism and streptococcus infections of the tonsil, accessory sinuses and pharynx, seems to be definitely established not alone by the extraordinary frequency with which pure or nearly pure cultures of various strains of pathogenic streptococci occur in the depths of the tonsils of rheumatic patients, but also by the astonishing immunity to, or relief from, the disease, following the complete, painstaking removal of all tonsillar tissue, or the cure of other foci of infection.

Guerich advocates the removal of tonsils at any stage of an active rheumatism, and though we may consider this a too radical rule of action, we must admit that their extirpation whenever found diseased is indicated in all persons who show a rheumatic tendency, or who have passed through an attack of the disease. Indeed, bearing in mind the early or primary involvement of these structures in diphtheria, influenza, scarlatina and other acute infections in which endocarditis and myocarditis frequently occur, it would seem that we are justified in placing tonsils in the same category with adenoids and suppurating accessory sinuses in relation to operative procedure. They are natural incubators and food depots for invading organisms and may appear perfectly normal on inspection even while they are breeding generation after generation of pathogenic organisms, or as is stated by Guerich and others, containing actual pus in considerable quantity.

With the careful investigations of tonsillar flora now in process by Rosenow and D. J. Davis of Chicago, the work that is being done by Schottmüller and others on

endocarditis lenta and the *Streptococcus viridans*, and by Poynton and Payne on the flora of the periarticular tissue in rheumatism, we may hope to obtain more specific information of yet greater value in relation to the various strains of streptococci attacking the heart; but even now we are fully justified in believing that early attention to the tonsillar field alone will serve to diminish greatly the incidence of heart-disease in both children and adults.

Yet another practical point of value is to be found in the consideration of our treatment of acute rheumatism, diphtheria, scarlatina, influenza and indeed any affection associated with marked physical prostration. In such cases I believe that the excessive weakness is ordinarily not one primarily or chiefly arising from or affecting the skeletal musculature, though this must of necessity be a factor, but rather in large degree the weakness of a poisoned myocardium. In the presence of prostrating acute infections the cardiac muscle invariably shows the greater or less effect of circulating toxins at autopsy even though endocarditis or actual myocarditis be absent.

The heart's intrinsic circulatory capacity is ten times that of the skeletal muscles. It is an extraordinarily delicate and highly specialized tissue, and it must maintain constant activity under direct and disproportionate exposure to the toxins of disease. Furthermore, auricular fibrillation, the lesser degrees of heart-block and extrasystolic irregularities occur with suggestive frequency in acute infection. The skeletal muscles, on the other hand, are at rest, they receive a far less abundant blood-supply and in most instances of brief prostrating infections fail to show under dynamometric tests anything at all in accord with the subjective manifestations of exhaustion. In many of these cases, carefully conducted percussion will reveal an abnormally increased cardiac outline, especially in such persons as structurally fall under the head of chronic congenital asthenia. Furthermore, one will often find even in the absence of profound anemia or actual endocarditis, not only transitory murmurs, but also weakness, undue sharpness, and muffling or abnormal accentuation of the cardiac tones of variable persistence and duration.

Many a case of persisting weakness and ultimate chronic degeneration of the myocardium dates its inception from the onset of such an attack and too prompt resumption of customary activities, and the need of prolonged cardiac rest after all prostrating acute infections is a matter of vital importance in prophylaxis too little regarded.

CONCLUSIONS

In closing, I desire to emphasize again the contentions on which this address is based:

1. An early diagnosis of cardiac insufficiency is absolutely essential to the patient's welfare.

2. Such early diagnosis necessitates a change in the general attitude of medical men with relation to the valuation of subjective symptoms and the determination of the symptomatic relationships of lesser cardiac dilatations.

3. A large group of chronically diseased individuals, usually classed as neurasthenics, while usually free from serious organic heart disease, are peculiarly lacking in heart-muscle tonus and possess extremely dilatable, symptom-producing hearts as a part of their fundamental and usually congenital defects in general bodily structure and function.

4. So little basis now remains for the retention of the term "neurasthenia" as descriptive of a concrete disease, and such serious errors of omission result from its continued prominence in the field of chronic ailments, that it should be dropped from the literature of medicine, or be given its true valuation under a proper terminology.

5. The term "perfect compensation" in heart-disease is a misnomer, and the pathologic events in such cases make it evident that there is a constant, more or less gradual but progressive limitation of the field of cardiac response, and periods must inevitably occur from time to time, long before the onset of emergent or gross symptoms, when appropriate therapeutic measures will support and aid the embarrassed and laboring heart, relieve suffering and prolong life.

6. To make the symptoms of extreme cardiac exhaustion one's only justification for active therapy is both illogical and dangerous.

7. The recent studies of the causative agents and portals of infection in acute rheumatism, a better knowledge of the nature and means of detection of syphilitic infection and the introduction of new agencies and better methods for the intensive treatment of lues make both the avoidance and permanent cure of these conditions easier, and indicate the possibility of greatly limiting the large group of myocardial and aortic lesions of which they are the causative factors.

8. Chronic disease in general, and cardiac disease in particular, are granted far less critical attention and direct control than is properly due them.

9. Chronic heart-disease, though incurable, is wonderfully responsive to intelligent and properly timed treatment, and always benefited by such proper supervision and control as is indicated in the individual case and obtainable only through early diagnosis, tactful disclosure and a well-balanced optimism.

THE TREATMENT OF DIPHTHERIA-CARRIERS BY OVERRIDING WITH STAPHYLOCOCCUS AUREUS *

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The practice of "overriding" the throats of chronic diphtheria-carriers with suspensions of *Staphylococcus aureus* was introduced by Schiotz[1] in 1909. He was led to the use of *Staphylococcus aureus* by the observation that a patient with a sore throat due to the staphylococcus did not contract diphtheria when exposed, and also that several convalescents failed to show positive diphtheria after an attack of staphylococcus sore throat. He treated six cases with prompt disappearance of diphtheria bacilli in all of them.

Page,[2] in 1911, reported the successful use of staphylococcus in one case in which the bacilli had persisted in the throat for three months after clinical recovery.

In 1911, Catlin, Scott, and Day,[3] of Rockford, Ill., reported the successful use of staphylococcus in eight cases on the advice of Dr. Harris of Chicago.

* Read at the Annual Meeting of the Medical Society of Wisconsin, Wausau, May 21-24, 1912.

1. Schiotz: Ugeskr. f. Læger, 1909, lxxi, No. 49; abstr. in THE JOURNAL A. M. A., Jan. 29, 1910, p. 422.
2. Page, H.: Arch. Int. Med., Jan. 15, 1911.
3. Catlin, S. R., Scott, L. C., and Day, D. W.: THE JOURNAL A. M. A., Oct. 28, 1911, p. 1452.

Lydia M. De Witt[4] has carried out an extensive series of experiments in animals. She reports that of thirty-two animals inoculated with diphtheria and afterward treated with a staphylococcus culture, nine were apparently not influenced by the treatment, fourteen were worse, and nine better. De Witt concludes that there is no rational basis for treating diphtheria cases with *Staphylococcus aureus*. She reports also two cases of sore throat in which diphtheria developed, and in one gained and kept the ascendency. De Witt admits, however, that the animal experiments indicate that a certain percentage of acute cases may clear up more quickly under staphylococcus treatment than under ordinary antiseptic treatment.

These favorable reports induced us to try the method in a troublesome outbreak of diphtheria in the State Hospital at Mendota, the clinical report of which is given here by Dr. Lorenz.

During this epidemic carriers were found and were the source of considerable annoyance. The usual antiseptic methods of treating these cases were found ineffective and at the suggestion of Dr. Ravenel, pure cultures of *Staphylococcus pyogenes aureus* were used. Various strains were tried, though the results were the same irrespective of the strain used.

In the diagnoses of the cases here reported every effort was made to rule out the personal equation. For the most part cultures were examined by two of us in the laboratory. At our request Dr. Lorenz did not indicate which patients were receiving the staphylococcus spray and which not.

In all, seventeen patients received this form of treatment. Three were carriers pure and simple, that is, they never showed clinical manifestations either local or constitutional. We will refer to this type of carrier as Class 1. Six patients showed clinical symptoms of diphtheria. The local signs ranged from congestion or hyperemia to distinct membrane formation. These patients had all received the routine local antisepsis but persisted as carriers long after convalescence had been established. We will refer to these as Class 2. In eight cases the staphylococcus spray was used early in the course of the diphtheria. In these instances no other form of local treatment was employed (with one exception). The treatment was begun immediately after the first positive or suspicious bacteriologic report had been received.

The results in Class 1 were uniformly good. In two cases negative reports were received after six applications of the spray. Three months later one of these patients again became a carrier and the reinfection was cured in the same manner. The third case did not clear up under the staphylococcus spray alone though after a combination of nasal and throat application negative cultural reports were received. In this instance nine combined applications were made three successive days while in the first two cases six applications sufficed to bring about a cure. These three patients were attendants on duty in the isolation ward and, as previously mentioned, never showed clinical manifestations of diphtheria.

The six patients referred to as carriers of the second class received the following treatment during the acute stage of the diphtheria: antitoxin in various amounts from 5,000 to 25,000 units, some by the intravenous method and others by deep muscular injections. The local treatment used was hot saline douches every four hours alternating with a spray of liquor antisepticus, liquor sodii boratis compositus (Dobell's solution), potassium permanganate solution, chlorin water or mercuric chlorid solution. In spite of this treatment the throats continued to show the diphtheria bacillus long after the patient was well, in one instance, nine weeks. The average was seven weeks.

The local antiseptic treatment was discarded and the staphylococcus spray was substituted. Four of the cases cleared up within one week; in two the results were not so good. These exceptions can possibly be accounted for and a more detailed report is warranted.

4. DeWitt, Lydia M.: Jour. Infect. Dis., January, 1912.

REPORT OF CASES

CASE 1.—The patient, E. F., was first isolated owing to a congestive condition of the throat. The first bacteriologic report was "suspicious." The clinical manifestations rapidly improved following the administration of antitoxin, and local antisepsis. The patient was discharged from quarantine after three consecutive negative cultures had been obtained. These cultures were made at two-day intervals. One week after the last negative culture a fourth swab taken was reported as "suspicious" and the patient was again isolated. Staphylococcus spray was now employed and after four applications made at four-hour intervals two negative reports were received. In this and the other cases no local treatment whatever was given during the time negative reports were being received. A third swab taken eight days after the first negative was diagnosed as "positive." The spray was then applied on the two succeeding days at four-hour intervals, and the bacteriologic reports following were "suspicious" and one day later "positive." The combined method of application was now used. In all, twelve applications were thus made, and following this procedure three negative reports were obtained over a period of two weeks. Ordinarily this was sufficient to warrant removal from isolation, yet a fourth swab was made and much to our surprise the report returned was "positive." The combined method was again resorted to and for six days applications were made at four-hour intervals (three per day). This was followed by five negative cultures, though one of a "few suspicious organisms" was found between the second and third examinations.

The peculiar course is rather difficult of explanation. The recurrence of positive cultures after two and even three negative findings may have been due to reinfection, the patient having been on the diphtheria ward throughout this period. On the other hand, the possibility of a focus of infection so situated in the nasopharynx as to prevent proper application of the spray must be considered. In all, this patient received the staphylococcus spray six weeks before the repeatedly negative cultures were obtained.

CASE 2.—Patient, H. O. of Class 2, is equally interesting and exceptional. This patient had a moderately severe clinical diphtheria. He received the routine treatment mentioned and was removed from the isolation ward after two negative reports had been received. Up to this time he had been in isolation fifty-two days. One month after his removal he showed a slightly inflamed condition of the tonsils. The bacteriologic report made was "positive." The patient was then returned to the diphtheria ward and treatment with the staphylococcus spray was started. At first the throat spray alone was used and the cultures continued "positive." The combined method was then employed and after nine applications made on three succeeding days, the first "negative" report was received. After a week of non-treatment the swab taken was reported as "positive." This fluctuation from negative to positive continued several times after three negatives had been obtained. In fact, four negatives and two suspicious cultures were made from this throat during a period of sixteen days, when a return to positive occurred. At this point massage of the tonsil was attempted. Pressure was made about the tonsil with an ordinary tongue-depressor. Accompanying

this procedure staphylococcus spray in extremely concentrated form was used, and finally a series of negative cultures was received.

In this case fifty days of treatment with staphylococcus spray elapsed before the patient was thought to be cured. In this instance it seems probable that the source of trouble lay in the large spongy tonsil, and it seems to illustrate the condition which has recceived special attention by Dr. Kretschmer,[5] namely, that the diphtheria bacilli are harbored in the crypts of the tonsil in many instances.

We give a history of several other cases as follows:

CASE 3.—The patient, W. F. D., a student at the University of Wisconsin, became ill with diphtheria, Feb. 5, 1912. Antitoxin was administered and clinical recovery was prompt, but diphtheria bacilli persisted in the throat. On the twenty-sixth day Dr. H. M. Kay, the physician in charge, asked advice concerning the matter. We recommended to him the use of the staphylococcus spray. This was supplied to him in the form of a twelve-hour-old culture in bouillon, the directions being to spray it thoroughly into the throat and nares. Thirty-six hours later a culture taken was negative to diphtheria, and five consecutive cultures remained negative. In this case the action of the staphylococcus spray was rapid and permanent.

CASE 4.—X., a boy, aged 13, was taken out of school as he was found to be carrying an almost pure culture of Klebs-Loeffler bacilli. As the condition persisted for over two weeks, Dr. J. M. Furstman, health officer of LaCrosse, consulted the State Hygienic Laboratory, and cultures of the staphylococcus fifteen hours old were sent to him. The throat was sprayed every second day. At the third spraying, the number of diphtheria bacilli was very much decreased. The fourth culture also showed diphtheria bacilli, but four subsequent cultures remained negative.

CASE 5.—In a factory in the city of LaCrosse, owing to an outbreak of diphtheria, the throats of approximately 350 operatives were examined. Six carriers were found and isolated. Five of these cleared up under ordinary treatment within a week. The diphtheria bacilli persisted in the sixth patient, a woman, aged 19. Dr. Furstman began the use of the staphylococcus spray, using it, however, only every second day. Two cultures from the throat after the beginning of the spray were positive, but after that all cultures taken remained negative.

RESULTS OF USING THE SPRAY

The use of the staphylococcus spray early in the course of diphtheria was tried in eight cases. Each patient received antitoxin, though locally no treatment other than the staphylococcus was used (except in one case). In four of these cases the results were very good; that is, negative cultures were obtained within one week and after the use of four to eight applications of the spray. The duration of the entire quarantine in these cases was from six to fourteen days. Two cases were clinically typical while two were mild, the local manifestations being simply a congestion of moderate severity.

In three cases the results were fair. Almost invariably after six or eight applications were made the first swab taken would be negative. In several instances this negative finding was repeated only to be followed by a positive. The duration of suspicious or positive reports in these three cases was twenty, twenty-two, and thirty-six days, respectively.

One case was mild; there was no membrane and very slight constitutional reaction. The throat symptoms cleared up within a few days after the administration of antitoxin though the cultural reports continued positive. Frequently two and even three consecutive cultures would be negative, and the next positive. On one occasion the throat continued negative for nine days when a return to positive occurred. At this point the staphylococcus spray was abandoned and a 1:2,000 solution of mercuric chlorid was used. Six applications were made, but a culture taken was reported as "positive, almost pure culture." The former treatment was then resumed and finally the case cleared up. The total duration was thirty-nine days.

In the last series of cases the staphylococcus spray was not used until the first swab had been reported on, while the antitoxin was usually given at the first indication of any throat involvement, irrespective of its severity; in fact, many patients had had immunizing doses. The result was that local signs of involvement had in most instances disappeared by the time the spray was used. In other words, no effect on local manifestations of diphtheria was observed following the use of the staphylococcus spray. In those cases in which membrane was present the spray was not used until after the membrane had separated.

The method of employment was arrived at in a rather tentative manner. Our early timidity and caution, judging from subsequent experience, was unwarranted. Over 200 applications were made and the few exceedingly mild conditions attributable to staphylococcic infection would indicate that the method is essentially a safe procedure.

A combined nasal and throat spray is advised, to be given at four-hour intervals on two succeeding days; the first swab for examination should be made the third day.

The preparation used is a fresh suspension of the *Staphylococcus pyogenes aureus* in normal saline solution or a bouillon culture twelve hours old. An effort was made to keep the spray at a temperature of about 96 F. The application itself was made first into the pharynx, the spray being directed over the uvula, each tonsil and the posterior wall of the pharynx. Following this the application was made into each nostril. The amount used was sufficient to produce a "dripping-wet" condition of the pharynx and the nasal cavities were sprayed until, as one patient expressed it, "I can feel it run down the back of my throat."

The untoward symptoms attributable to staphylococcic infection can practically be ignored. Three patients developed a coryza and one an exceedingly mild laryngitis, while two developed small furuncles at the tip of the nose. Other than these trivial conditions no complications or sequelæ developed in any of the cases treated.

In the last series of cases it seems that better results were obtained in those patients treated with the staphylococcus spray than in those treated by the ordinary antiseptic application. With one exception no other form of local treatment was used. Consequently, we feel justified in attributing the results entirely to the use of the staphylococcus spray.

The variability of results in the two classes of carriers arbitrarily referred to as Class 1 and Class 2 can possibly be explained on the following ground: In the first class it is presumed that the location of the diphtheria bacilli is superficial, the intact mucous membrane, or immunity of the individual, or both, preventing propagation and systemic infection; and the spray can come into direct contact with the bacilli. The less successful termination in Class 2 may be caused by the less accessible position of the diphtheria bacilli. Those superficially located are probably acted on as indicated by the

5. Kretschmer, quoted by Ruhräh, John: Prog. Med., March, 1912.

fact that one or more negative cultures immediately following the use of the staphylococcus spray are almost always obtained. The later "positive" findings are probably due to the bacilli deep in the glandular crypts, which are possibly protected by plugs of mucus or detritus.

CONCLUSIONS

1. Pure cultures of *Staphylococcus pyogenes aureus* sprayed into the throat and nasal cavity will cause a disappearance of diphtheria bacilli.

2. The above-described method of treatment is most effective in carriers of the first class.

PNEUMOCOCCUS INFECTION AND IMMUNITY *

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During the past few years there has occurred a revival of interest in the study of the nature of infection with the pneumococcus. It will be impossible to review all the discoveries of interest and importance that have been made. The intention is to confine the present discussion mainly to certain observations made by my colleagues and associates and myself, which seem to have some value in enabling us to obtain a clearer conception of the process in pneumonia. Certain of the hypotheses advanced must be considered to be purely tentative and further work may show that different explanations are the correct ones.

Biologically as well as clinically the course of lobar pneumonia consists of these phases: First, there occurs the infection and onset of the symptoms, which events may or may not be simultaneous; second, the clinical disease itself or the intoxication; and third, the recovery or immunization, using the latter word in a broad sense as signifying the onset of a refractory state, whether this be insusceptibility or resistance to the infection or to the intoxication.

THE ONSET OF PNEUMONIA

In the first place, why does a person contract pneumonia? Is it merely that a pneumococcus, a normal inhabitant of the mouth, possibly riding on a drop of moisture, is accidentally carried into the healthy bronchus, and, after being tossed backward and forward on air currents, finally settles on the mucous membrane of one of the bronchial branches, begins at once to multiply and so induces the disease? The disease, according to this view, must be considered purely as an accident due to the pneumococcus reaching the lung. It hardly seems possible that this simple explanation can be the correct one. It is quite probable that pneumococci normally invade the lung in small numbers, at least occasionally. However this may be, the fact is established that in pneumonia the pneumococci are in the lung and multiply there, which is not normally the case. The usual explanation of this occurrence is either that the pneumococci are more virulent than usual, or that the resistance of the host is lowered.

Much work has been done in order to determine whether or not pneumococci obtained from patients with pneumonia are more virulent for animals than those obtained from normal persons. This is an extremely difficult problem to solve, and it is impossible to review all the evidence in regard to this point. An observation made lately, however, seems to have a bearing on the important question as to whether or not pneumococci of low virulence may be responsible for the onset of pneumonia. In making cultures from the blood of pneumonia patients during the past year we have tested the virulence of all the organisms obtained. Most of the organisms so cultivated have been of high virulence for mice and rabbits, but in at least two instances organisms of extremely low virulence have been obtained. While it is possible that in these cases the organisms may have lost their virulence in the body, we know from experiments that exaltation of the virulence of organisms when grown in the animal body is the rule. The experiments of Meltzer and his associates, which I shall mention shortly, also establish the fact that in dogs, at least, pneumonia may be induced by organisms of low virulence.

That a decreased general resistance on the part of the body is present and is responsible for the onset of the pneumonia is possible, but at present the experimental evidence in favor of this view is not convincing.

We have experimental evidence to support the view that the onset of pneumonia occurs because there is a changed condition in the lung which permits pneumococci to grow there. Meltzer, Lamar and Wollstein have elaborated a technic by means of which it is possible to produce, uniformly and constantly, in dogs, lesions in the lungs which closely resemble, if they are not identical with, lesions found in the lungs of men dying from acute lobar pneumonia. The method consists in the direct injection of quite large amounts of the culture fluid through a catheter inserted into the bronchus. It is a most important fact that these lesions have been produced, not only with organisms having high virulence for rabbits and mice, but also with pneumococci having practically no virulence for these animals. A second important point is that in order to produce these lesions, quite large amounts of culture fluid must be injected, and this must be blown into the finer air-passages, probably, as Meltzer has pointed out, so as to occlude them. This experimental work permits a new conception of the onset of pneumonia. What may first occur in pneumonia is an exudate which may be entirely non-specific in character and may be dependent on circulatory changes due to cold, trauma, etc. The smaller bronchioles being occluded, a true cavity is formed. The lining of the involved air-sacs no longer forms a part of the surface of the body, but lines a true cavity filled with fluid. Pneumococci, being the organisms most commonly present, begin to grow and change the character of the fluid so that it is irritating. An observation by Gillespie shows that the reactions induced by the growth of pneumococci may be quite different, depending on whether free oxygen be present or not. When pneumococci are grown on the surface of serum agar directly in contact with the oxygen of the air, the medium is not clouded, or only to a slight extent. Probably little acid is produced. When, however, they are grown in the depths of the medium so that no air comes in contact, there occurs a marked clouding of the medium.

There is much evidence against the old view that the lesions of lobar pneumonia begin uniformly throughout an entire lobe. Clinical evidence is decidedly against this. Moreover, examination of the lungs of persons dying of lobar pneumonia shows that extension is

* Read in the Symposium on Recent Advances in Our Knowledge of the Acute Infections in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

constantly going on. The extension is not uniform, but is patchy and lobular. The classical description of the lesion of lobar pneumonia in an exudative stage, a stage of red hepatization and one of gray hepatization, is responsible for this old conception. Supported by all these observations, we may conceive that the pneumococcus is not the first cause of pneumonia, but that pneumonia probably arises because in a small portion of the lung a non-specific exudation occurs, and later the pneumococci grow in this and produce irritating substances. From this small focus, or from a few or many small foci, extension occurs until the entire lobe is involved. As the pleura forms a natural barrier to extension, the process tends to become lobar.

THE CLINICAL DISEASE

The clinical features of pneumonia are those of an acute intoxication. The pulmonary changes are not essential to the condition since pneumococcus septicemia, entirely apart from lung involvement, may exist. Moreover, severe symptoms may arise when the pulmonary lesions are comparatively slight, though this is not usually the case. We have been much impressed with the fact that extension of the local process is associated with a continuation and increase of the symptoms, so that it seems improbable that the general symptoms are entirely independent of the extent of the local lesions. The most severe symptoms, however, arise when, instead of the process being entirely a local one, a general infection supervenes.

There have been several theories to explain the intoxication. It has been suggested that it may be due to the absorption of the products of digestion of the local exudate. But we know that the patient may be free of symptoms when this process is most active, namely, following the crisis. So far, all attempts to discover a toxin in the culture fluids of pneumococci have been unsuccessful. But it is possible that the metabolic products of the growth of pneumococci within the body are different from those formed when the organisms are grown in the test-tube. To test this point, rabbits were profoundly infected with pneumococci. Just before death they were bled, the serum was passed through a Berkefeld filter and the filtrate was then injected into a second series of rabbits. No signs of intoxication could be detected. It is well known that pneumococci, when grown in a medium containing carbohydrate, produce acid, and it is possible also that by the growth of the organism in the body the normal metabolism may be so altered that the normal reaction of the body tissues may be changed. Complete metabolic studies and studies of the oxygen and carbon dioxid content of the blood, carried on by Peabody, have not tended to support this point of view. A mild grade of acidosis occurs in all febrile conditions, but the evidence seems to indicate that the symptoms in pneumonia represent more than an acidosis.

In our experimentation we have turned to the isolation of toxic substances directly from the bodies of the bacteria. Years ago Pfeiffer showed that the killed bodies of certain bacteria are toxic when injected in considerable amounts. To these so-called endotoxic substances have been loosely ascribed the symptoms in a large number of infectious diseases. Pneumococci, when killed by heat, have very little toxicity. It has been shown by Friedberger, however, that if bacteria are first treated with immune serum, then centrifugalized, and these so-called sensitized bacteria are then treated for a number of hours with serum containing complement at 37 C., a change, supposedly digestive, occurs and the resulting extract is toxic. Owing to the fact that the death resulting from the injection of this extract into guinea-pigs is like that seen in anaphylactic death, Friedberger gave to this substance the name "anaphylatoxin." He thinks that the substances in question are identical with those producing death in anaphylactic shock following the second injection of horse serum. Based on this experiment, Friedberger and others have developed a theory of intoxication in the various infectious diseases, namely, that the bacteria growing in the body stimulate the production of antibodies, and that these sensitize the bacteria, which are then acted on by the complement, and the intoxicating substances result.

We, as well as others, have repeated these experiments with pneumococci and have found them correct, but differences of opinion exist as to their interpretation. It has been shown that under certain circumstances similar results may be obtained by the action of normal serum on the bacteria without previous treatment with immune serum. Dold and also Rosenow have shown that if bacteria are merely allowed to stand in salt solution for from twenty-four to forty-eight hours, so as to undergo what has been termed autolysis, the resulting extract is toxic also. We have also repeated these experiments with pneumococci, injecting the extracts into a large number of guinea-pigs, and have found that under certain circumstances such extracts are toxic, but that their action is inconstant and that it is extremely difficult to determine the exact conditions under which such extracts will be uniformly toxic. Instead of dying acutely, many of the animals die in from three to eight hours, and at autopsy marked hemorrhages are found in the cecum and stomach, and punctate focal hemorrhages are present in the lungs. Based on the experimental production of toxic autolytic extracts, Rosenow has formulated a theory of virulence. He states that virulent pneumococci autolyze readily and set free the toxic substance; non-virulent ones do not. Therefore virulence depends on the readiness with which pneumococci autolyze. We do not feel that the matter is as simple as this. While it is true in general that the more virulent pneumococci do autolyze more readily, yet these two properties, virulence and ability to autolyze, do not run parallel. Typical pneumococci, in our experience, always autolyze, whether they possess high virulence or not. Moreover, if a typical pneumococcus is allowed to grow on artificial culture medium until it has lost its virulence, it still continues to autolyze.

In our efforts to obtain these toxic substances more constantly, in order that more might be learned of their nature, we tried a large number of procedures which need not be mentioned in detail, but finally tried dissolving the bacterial bodies in a dilute solution of bile salts. It is well known that pneumococci are readily soluble in these substances. Much to our surprise, we found that such a solution of pneumococci in bile salts is highly toxic, killing guinea-pigs when injected intravenously within a few minutes. In the experiments the pneumococci were grown in bouillon, washed once in physiologic salt solution, and made into an emulsion in as small an amount of salt solution as possible. The latter procedure is due to the experimental observation that the solubility of pneumococci in bile solutions is dependent on the concentration of the bile in the solution, and not on the relation of the number of pneumococci to the amount of bile present. After solution has

occurred, the dilution may then be made to any degree desired. In the experiments a 2 per cent. solution of sodium cholate has been employed, 0.2 c.c. of which is sufficient to dissolve the bacteria from 100 c.c. of bouillon culture, if the bacterial emulsion be sufficiently concentrated. Many times the amount of sodium cholate used for the single injection may be injected into a normal animal without producing symptoms. It is necessary to use considerable amounts of the dissolved bacterial substance, but not more than needs to be employed in producing an active amount of Friedberger's so-called anaphylatoxin, or in producing a lethal dose of the so-called autolytic extract. Not only is this solution toxic for guinea-pigs, but it also produces acute death in rabbits when injected in proper amounts. The symptoms produced in rabbits are exactly like those described by Auer as occurring in acute anaphylactic shock in rabbits.

It does not seem important to insist on the relation of the toxic substance to anaphylaxis except in connection with the fact that this toxic substance may be produced by allowing the mixture containing bacteria and bile salts to remain at 37 C. for as short a time as ten minutes, or on the ice at 4 C. for thirty minutes. It is generally accepted at the present time that the toxic substance responsible for acute anaphylactic shock is a product arising from the splitting of the protein. If we admit that the intoxication arising from the injection of the bacteria treated in these various ways is identical with that in anaphylactic shock, we must consider that some other explanation of the nature of the intoxicating substance in anaphylaxis must be probable, for it seems hardly possible that a digestive process could be effectual, acting at such temperatures in such short spaces of time. It would seem more likely that the substances concerned are preformed in the bodies of the bacteria and are set free by the solution of the bacterial wall. It would thus seem that in this instance the conception of Pfeiffer of an endotoxin is more likely to be correct than the present conception that such substances are digestive products. In any case, an active poison may now be readily and constantly produced from the bodies of pneumococci. It may or may not be that responsible for the symptoms in pneumonia. This substance is labile, being destroyed at 60 C. for one hour. It not only produces acute death in rabbits and guinea-pigs, but by regulating the dose, death may be induced at different intervals. In the less acute death, hemorrhages into the peritoneum are common, frequently there is an acute nephritis, and the liver is pale.

MODE OF RECOVERY

The third problem in pneumonia relates to the outcome of the disease. It would seem that in pneumonia, with its sudden crisis — one of the most startling and dramatic events that confront the physician — an ideal opportunity would be offered to learn the nature of the process of recovery; but up to the present little evidence as to the nature of crisis has been accumulated.

It has been thought by some that the crisis is only the general manifestation of the onset of resolution. The theory supposes that in the consolidated lung absorption is constantly taking place, that the exudate is under tension, and that when there has been a sufficient setting free of ferment by the breaking down of leukocytes to induce lysis, tension is relieved, absorption stops and the symptoms disappear. Instead of the surgeon inserting a knife, Nature injects a ferment. This is a fascinating theory, but has little to support it. The crisis often occurs before any signs of resolution may be discovered; indeed, resolution may occur long after all symptoms have disappeared.

In case the toxic substance previously discussed does bear some close relation to that involved in the production of acute anaphylactic shock, it is conceivable that the crisis may be merely the onset of a refractory state analogous to that seen after acute shock. As we are not yet in a position to draw any such conclusion, this is offered merely as a suggestion.

Naturally the main attempt to explain the crisis, as well as recovery by lysis, has consisted in the attempt to demonstrate antibodies in the blood-serum. So far the attempt to demonstrate an increase of the ordinary bactericidal substances which act in conjunction with complement have been unsuccessful. Attempts have been made, by combining leukocytes and serum, to show an increase of bactericidal or possibly phagocytic power, but these studies are not free from objection. Most of them have been made with organisms of low virulence. In the experiments in which plating methods were employed, the possibility of agglutination of the cocci has not been excluded. The experiments of Neufeld are of more importance as showing an increase in immune substances in the blood of patients following recovery from pneumonia. These results were obtained by testing the protective power of the serum for mice against a known lethal dose of pneumococci. He was able to show that while normal human serum had no such protective action, that obtained from patients following the crisis did have such an action. Certain writers, as Strauss and Seligmann and Klopstock, have not confirmed these results.

During the past year Dochez has studied the blood of patients suffering from pneumonia to settle this point and has obtained results which, in general, confirm those of Neufeld. The technic of the experiments was as follows: Specimens of blood were obtained at frequent intervals during the course of the disease, and also at the time of crisis and during recovery. These specimens were all kept on ice until the final specimen was obtained. Then, on the same day, the protective power of all these samples of serum was tested by mixing constant amounts with varying doses of pneumococci and injecting the mixtures into mice. A large number of mice were required, as many as 100 for a single experiment. The organisms used in most cases were those obtained from the patient whose serum was being tested. If they were not virulent when isolated, they were rendered so by passage through animals. The serum from fourteen cases was studied in this way. In one case the serum two days before crisis showed no protective power. Three hours after the crisis 0.2 c.c. of the serum protected a mouse against 0.0001 c.c. of the culture. In this case 0.000001 c.c. of the culture uniformly killed when given alone, or when mixed with the serum obtained before the crisis. The serum obtained two days after the crisis protected a mouse against 0.001 c.c. of the culture. Serum obtained seven days after the crisis showed no protective power.

If this were a constant finding one might conclude that the development of protective immune bodies in the blood of the patient with pneumonia was the cause of crisis, or at least that the crisis was associated with such a change; but this development of immune bodies in the blood serum cannot be demonstrated in all cases. In fact, among the fourteen cases studied, no other showed such a typical curve as this. In certain cases the appearance of immune bodies did not occur until several days after the crisis had occurred, and in other cases no

appearance of immune bodies could be demonstrated. In the majority of cases, however, there occurred an increase in the immune bodies of the blood at or about the time of crisis, and this increase usually persisted for over a week or ten days. The irregular results obtained make it seem hardly possible that the crisis is directly dependent on this one factor alone. From clinical observation it would seem much more likely that the crisis represents a kind of neutralization of the intoxication rather than a destruction of the bacteria existing within the body.

It is nevertheless true that the presence of bacteria in the blood apparently bears some relation to the outcome, for while in the patients that recover the bacteria are absent, or present in small numbers in the circulating blood, in the cases that go on to a fatal termination bacteria are usually present in large numbers. Moreover, while the virulence of the organisms concerned seems to play but a slight rôle in the onset of the disease, this factor is apparently an important one in the outcome. In practically all cases in which large numbers of highly virulent organisms were present in the circulating blood, death resulted. On the other hand, in several cases in which the organisms in the circulation were of low virulence, recovery ensued. It therefore seems probable that while the crisis may result from a neutralization of the intoxication, the possibility of this phenomenon is dependent on the power of the body to overcome the vegetative functions of the bacteria. At the present time, at least, our only definition of virulence as regards pneumococcus must be power to vegetate within the body. In other words, the virulent organism has become adapted to this environment. This adaptation is apparently a property both easily acquired and easily lost by the pneumococcus. It is evident, then, that the crisis in pneumonia is still an obscure phenomenon, and at the present time it cannot be stated positively whether it represents a destruction of the bacteria, a neutralization of the poison, a kind of anaphylactic shock, or a combination of all these phenomena.

ACTION OF IMMUNE SERUM

Finally, we may briefly consider the newer work concerning specific therapy, especially treatment with immune serum. Observers who have attempted to produce active immunity to pneumococci have usually found little difficulty in doing so. By the injection of living cultures intravenously in horses, as the method was first described by Neufeld, we have succeeded in so immunizing a horse that it will stand as much as 2,500 c.c. of the virulent culture. But while many observers have succeeded in producing an efficient active immunity in various animals, more difficulty has been encountered in producing passive immunity, especially in producing a serum having curative value. When injected together with the culture, the serum which we have employed has been so active that 0.2 c.c. will protect a mouse against 1 c.c. of a culture of which 0.000001 c.c. kills — a protection against 1,000,000 lethal doses; but if the lethal dose of pneumococci is given first and the serum injected only a few hours later, it is difficult to protect, no matter how much serum is injected. This is the stumbling-block in the whole question of treatment with immune serum. Various explanations have been offered. Neufeld, who has done the most valuable work lately in connection with this question, has endeavored to show that the failure to cure is due to the fact that sufficient serum is not employed. He bases this view on certain experiments which he has performed, which show that as one injects mixtures of serum and bacteria into a series of mice, gradually reducing both in the same proportion, a point is reached where the small amount of serum injected fails to be efficacious. He therefore thinks that the reason why our immune serums have failed to cure is that too small amounts, in proportion to the body weight, have been employed.

Dochez has performed experiments which seem to indicate that there may be another explanation for the failure of immune serums to be curative. He has studied the results obtained by injecting mixtures of immune serum and culture into a series of mice, not only decreasing the amounts of serum and bacteria in the same proportion, but also gradually increasing the amount of bacteria injected, and he finds that as one increases the amount of bacteria it is necessary to inject proportionately more and more of the serum in order to protect, and that finally a point is reached where no amount of serum, however great, is sufficient to save the animal. This seems to indicate that, in addition to the presence of immune bodies contained in the serum administered, it is necessary for the body of the infected animal to play an active part, and that where the infection is very severe the body is unable to react to a sufficient degree.

In pneumonia we are dealing not with a mild infection but with a most severe one, in which the body contains an enormous number of organisms. It seems probable that the reason the serum is not efficacious in these cases is not that a sufficient amount of immune body is not being given, but that the body is not able to complete the action of the immune substance. If we are to make such serums efficacious in treatment, we must find some method of increasing this completing action of the body. Since we apparently do this in active immunization, we may be able to obtain curative effects by combining active immunization, that is, vaccination, with the supplying of immune bodies — the administration of immune serum. It becomes more and more evident that such methods should be carefully worked out on animals before being applied to patients. By careful animal experimentation along this line it is quite possible that favorable results may be obtained even with the resources we now possess.

There is one further point in regard to the use of immune serums which should be borne in mind. Our experiments with blood-cultures have shown that our univalent serum, that is, one produced by the injection of a single strain, has been efficacious in protecting animals against about only 40 per cent. of the cultures obtained from the circulating blood of patients. This means that at least 60 per cent. of cases are due to organisms other than those of the type strain. Whether a polyvalent serum will enable us to overcome this factor is not certain.

In regard to the results of the practical application of specific forms of treatment, but little need be said at the present time, as so far the value of none of them has been sufficiently established. Interesting observations on the specific treatment of experimental pneumococcus infections by means of mixtures of soap, serum and boracic acid have been made by Lamar. This work is based on sound experimental evidence, but so far has not received practical application. Leukocytic extracts, vaccines and watery extracts of bacteria have been employed as therapeutic measures. Their exact value still remains to be determined. Moreover, Morgenroth has prepared a derivative of quinin, ethyl-hydrocuprein-hydrochlorate, which is said to have curative value in experimental infections

and has already received some clinical study. Unfortunately, several cases of amblyopia have resulted from its use.

This report and brief review of some of the work that has been done in connection with pneumonia during the past few years shows that there is considerable interest in the subject and that much work is being done, and while it is difficult at the present time to see exactly where the solution of the whole problem will lie, nevertheless the outlook is not without hope for arriving at a better understanding of the nature of the process, and possibly for obtaining a specific cure.

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ABSTRACT OF DISCUSSION

DR. S. J. MELTZER, New York: Medicine has been and is still dominated by the anatomic view of disease. The pathologic changes found after death from some disease are generally identified with the disease itself. But these anatomic changes might be only a consequence of the disease, or what is more important, they might be the result of the body's attempt to defend itself against disease, or an attempt to repair the injuries caused by the disease. When a patient succumbs to pneumonia, at autopsy we find anatomic changes in the lungs; they are partly consolidated and inflamed; they show red or gray hepatization, and we generally say that the patient died from inflammation of the lungs. But these phenomena may be looked on from another point of view, a view which I am inclined to advocate on the basis of some experimental observations. The essential features of inflammation are hyperemia and exudation. The hyperemia assists in the exudation of serum and cells. It is now generally assumed that the mission of the exudate is to defend the body against the invading infection. The leukocytes destroy the bacteria which are prepared for this end by the serum; the leukocytic and serum enzymes antagonize in some way the bacterial toxins, and the lymphocytes digest the débris of the coagulated serum, the fibrin and the broken-down leukocytes. In short, inflammation is a defense against disease and not the disease itself. Does the inflammation of the lungs have another meaning? It is plausible to assume that here, too, the anatomic changes present simply defensive reactions of the lung tissue against the invading pathogenic organisms. In many instances, however, the defenses fail and large numbers of the virulent bacteria succeed in escaping from the exudate and entering into the circulation at a period when the blood has lost a great deal of its defensive ammunition; this leads often to a fatal issue, which explains why Dr. Cole and others could easily find bacteria in the blood only in fatal cases of pneumonia. In experiments made by Lamar and myself by intrabronchial insufflation of cultures of a very virulent pneumococcus, typical pneumonic lesions were produced in every instance. The experiments gave a mortality of 16 per cent. and bacteriemia was present only in the fatal cases. In recent experiments which Dr. Wollstein and I have made with a non-virulent pneumococcus, again typical consolidations of the lungs were obtained but with no mortality and no bacteriemia. Apparently the anatomic changes in pneumonia are not the cause of death. Neither do they present the essential features of the disease. On the contrary, they are manifestations of the body's fight against the disease.

DR. V. C. VAUGHAN, Ann Arbor, Mich: Under ordinary conditions we are protected against infection by the proteolytic ferments in our bodies. These dissolve the bacteria with which we become inoculated. The pneumococcus is constantly with us. When for any reason our tissues fail to furnish in an active form the ferment that splits up the pneumococcus, it grows uninterruptedly, and pneumonia results. Of the protective proteolytic ferments with which our bodies are furnished there are two kinds: One is non-specific, but there are many reasons for believing that this is the one that protects ordinarily against pneumonia. Increased resistance to pneumonia is easily induced experimentally in the lower animals.

DR. WILLIAM D. ROBINSON, Philadelphia: The condition of toxemia in the alveoli precedes that in the bronchioles very often for days. Is Dr. Cole sure that the pneumonia began in the bronchioles, and was found only secondarily in the alveoli? I have found record of the presence of the pneumococcus in the very clear serous exudate in the alveoli. Afterward these organisms are apt to be found multiplied, but it seems to me that something was at work previous to the multiplication of the germs causing pneumonia that made it go into the alveoli, pus from there causing infection before the invasion of the pneumococci from the blood-current.

Almost every one of the cocci that produces inflammatory conditions, except the gonococcus, can produce pneumonia. The pneumococci have produced everything that the streptococci and other organisms can produce. If there is anything in that idea worthy of consideration, it might be worth while for some one with capacity and ability to make researches in this direction. We often have intoxications from the pneumococci resulting in the picture seen in blood invasion, without any lung involvement. Eliminate dysentery, and we evidently have mixed infections in very many of our cases, and a great many pneumonias without any pneumococci entering into them. It is impossible to separate these from pneumococcus pneumonia through the general symptoms. The only way to differentiate is by a study of the bacteria themselves.

DR. E. C. ROSENOW, Chicago: The "endotoxin theory" of Pfeiffer has interested me very much. The experiments, cited as proof that certain bacteria contain endotoxin, show that his animals died in from four to twelve and twenty-four hours after the injection was made. In repeating these experiments I find that when I inject unautolyzed suspensions or extracts of pneumococci into guinea-pigs they die in from eight to twenty-four hours, depending on the size of the dose. At a certain period, after the suspension or extracts have been kept at 37 C. the toxicity is greatly increased and the guinea-pigs die in two or three minutes from bronchial spasm, whereas later they show no immediate or subsequent symptoms. These changes have been proved to be associated with proteolysis. Suspensions of mechanically broken-up pneumococci, made by grinding in a mortar, and when autolysis is prevented by cold, kill in from six to twenty-four hours, but the animals show no immediate symptoms. When these suspensions are placed at 37 C. the appearance and disappearance of the toxic substance follows the same rule as in the case of pneumococci which are not previously broken up. From these experiments it would seem that, in the case of pneumococci at least, the toxic material is largely made during their disintegration whether *in vivo* or *in vitro*. By testing the effects of extracts in sodium chlorid solution of consolidated lungs and other pneumococcus exudates I have found that similar substances are formed *in vivo*. When the freshly washed material from these exudates is suspended in sodium chlorid solution and placed at 37 C., the toxic substances appear in solution and then disappear just as do those in suspensions of pneumococci. Since the toxicity disappears after a time in the suspensions of pneumococci to which bile-salts are added, it is apparent that the changes which take place in each case must be of a similar nature. In the case of autolysis in extracts of pneumococci, and in the action of normal and immune serum on pneumococcus extracts I have proved that the appearance and disappearance of the toxic substance is associated with proteolysis. While protein-splitting here and *in vivo* may not be the whole factor, I feel that the evidence is strong that in pneumonia, for instance, proteolysis plays an important rôle in the destruction of toxic substances, which may be specific to a certain degree and non-specific to another degree. Indeed, Dr. Dick has shown that at the time of crisis, or soon after, the specific proteolytic power against pneumococcus protein of the serum is definitely increased.

DR. A. D. HIRSCHFELDER, Baltimore: My father, Prof. J. O. Hirschfelder, of San Francisco, immunized rabbits by means of a pancreatic solution of pneumococci digested with pancreatin in an alkaline solution for about fifteen minutes. He

thus was able completely to dissolve the pneumococci. He then acidulated slightly with hydrochloric acid, and filtered with a Pasteur filter. The rabbits injected in this way with 35 to 40 c.c. of this solution acquired immunity for a period of from six to twenty days. In contrast to the bile solution that Dr. Rosenow and Dr. Cole have spoken of, this vaccine was able to retain its power to immunize for at least three months after its preparation, at room temperature, when the laboratory temperature varied from 45 to 65 F. The serum of a dog immunized with this dissolved pneumococcus was capable of protecting a rabbit against an ordinarily fatal dose.

Some experiments performed a couple of years ago by Dr. Ralph Major and Dr. Douglas Morse at Johns Hopkins, as a medical thesis for the medical clinic, and intended for publication along with other theses of fourth-year students, about two years ago, were undertaken at my suggestion, with a view to determining whether the crisis in pneumonia is an anaphylactic phenomenon, as Dr. Anderson had suggested. A cutaneous reaction was produced by the use of a very concentrated solution of pneumococci, which they were allowed to autolyze. A small number of cases (about five) were experimented on; the tests that were made before the crisis set in were all negative. There was no local reaction, any more than appeared in the controls. In the tests made at the time of and after the crisis, a peculiar papular reaction, which somewhat resembled the luetin reaction of Dr. Noguchi, but which consisted in the development of a much harder and more horny papule, took place. There was in some cases always a certain zone of erythema in the positive cases; but it did not bear a striking resemblance to the von Pirquet tuberculin reaction. On the other hand, in the patients who died, there was no reaction whatever. At the time of the crisis, there was no appearance of a large or an exclusive anaphylactic reaction that differed from the tests made on days subsequent to the crisis.

Dr. Rufus Cole, New York: If, as Dr. Vaughan and Dr. Rosenow maintain, the toxic effects of the bacterial extracts are due to the presence of products arising from the digestion of the bacterial protein, we must agree that in the case of bile-treated bacteria the splitting must be of an unusual kind, not comparable with that due to the action of ferments, like pepsin, since the bile extracts may become toxic within one-half hour in the ice-chest, and we know of no proteolytic ferments that act with such rapidity at low temperature. It is possible that the splitting is of a different and unknown kind, or that the digestion occurs only within the body of the animal and that the action of the bile is merely to render the protein suitable for such a rapid digestion. Even in the case of the so-called autolytic extracts, the evidence that the toxic substance is a product of protein digestion does not seem entirely conclusive. By shaking, I have been able to increase the rapidity of formation of the toxic substance, but the shaking was carried on at room temperature and the possibility that shaking merely increased the rapidity of digestion cannot be excluded. I have made no observations that would afford evidence for or against the view that infection in pneumonia occurs through the blood-stream.

CORPUS LUTEUM EXTRACT

WITH SUGGESTIONS AS TO ITS USE IN GYNECOLOGIC PRACTICE *

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The corpus luteum of the ovary, first described by Volcherus-Coiter,[1] was given its name by the celebrated anatomist, Malpighi. That it is a periodically forming body following each ovulation, and also that the corpus luteum of pregnancy is a more stable body than the ovulation corpus was recognized by Bischoff and other anatomic investigators of the first half of the nineteenth century.

Claude Bernard was the first to attribute to the ovary the function of elaborating an internal secretion. It is now fully established that the ovary does furnish a secretion which induces menstruation, maintains pregnancy during the early months, exercises a potent influence in the development of the individual, determines all the secondary sexual characteristics, i. e., the development of the breasts, the uterus, etc., and maintains with other internal secretory glands an important trophic influence on the bones, the fatty tissues and the general metabolism.

The first to suggest that the corpus luteum is the part of the ovary concerned with internal secretion was Gustav Born, while to L. Fraenkel[2] is due the credit of establishing firmly on an experimental basis that the corpus luteum is a most important secretory gland, and probably represents the principal source of the internal secretion of the entire ovary. This important contribution immediately attracted world-wide interest. He showed in rabbits that the maintenance of pregnancy during its first half depends on the integrity of the corpora lutea! And in woman he demonstrated that removal of all the luteum tissue is followed by a failure of the next menstrual period to appear. Other investigators have repeated his experiments and while some have obtained contrary results, taken as a whole all of these conclusions have been substantiated. According to Fraenkel, the fresh corpus begins to form nineteen days after the beginning of the last menstruation, reaches its height with the beginning of the next, and then gradually retrogresses so that at its end, lutean tissue has almost entirely disappeared.

In addition to work along the lines taken by Fraenkel, others have sought to establish experimentally the undoubted relationship between the corpus luteum and other internal secretory glands. Every clinician now recognizes that disturbances in the hypophysis, the thyroid, the adrenals and the pancreas are often followed by upsets in the ovarian function. Whether this is due to an inhibitory influence on the ovary, whether to the fact that the ovarian secretion in an effort to replace others fail completely to carry out its own, or whether the effect is some less direct action are most important problems and will be solved only by prolonged and pointed experimental work. Some of this work has already been done.

Rebaudi[3] has shown on rabbits that removal of the corpora lutea is followed by a proliferation of the cells of the islands of Langerhans in the pancreas. When, after removing the corpora, he injected lutean extracts, this proliferation was markedly decreased.

Giorgi[4] has shown that after removal of the corpora lutea there are marked changes in the hypophysis.

Hallion[5] has shown that intravenous injection of the extract of corpus luteum causes, in addition to a general fall in blood-pressure, a marked congestion of the thyroid gland.

Conversely, definite changes in the ovary have been noted after extirpations of the hypophysis of the pancreas and of the thyroid gland.

* Read in the Section on Obstetrics and Gynecology of the American Medical Association, at its Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. Volcherus-Coiter: Anat. exercit. observationesque variae Norimbergae, 1573, p. 124.
2. Fraenkel, L.: Arch. f. Gynäk., 1903, lxviii, 438.
3. Rebaudi: Zentralbl. f. Gynäk., 1908, No. 41.
4. Giorgi: Ginecologia, 1906, iii, 725.
5. Hallion: Compt. rend. de seanc. et mém. de la Soc. de biol., 1907, ii, 40.

The anatomic structure of the corpus luteum has been so thoroughly worked out and is so familiar that it would be superfluous to redescribe it here; likewise, the important question as to the histogenetic origin of the structure must be omitted for lack of space. Suffice to say that the lutean cells seem to develop both from the granulose layer of the ripe graafian follicle, as suggested by Sobotta, and from the internal theca cells, as described by John G. Clark.

While in the human being, the ape, the cow, the sow, the mare and the bitch, corpora lutea are being continuously formed with each ovulation as distinct compact structures, in other mammals, as the rabbit, the guinea-pig and the cat, the lutean cells are organized in a definite body only during pregnancy. In this latter class of mammals there is, however, a diffuse dissemination of lutean-like cells in the ovarian stroma between the primordial ova, to which the name of interstitial gland of the ovary has been given.

The most extraordinary specimens which I have ever had opportunity to study in reference to the formation of lutean cells have been afforded by the bilateral cystic ovaries removed with the uterus from a woman suffering with deciduoma malignum. In this specimen the ovaries were transformed into irregular polycystic masses and were as large as a grapefruit. Microscopically, they proved to be almost entirely composed of lutean tissue. Not only about the cysts, however, but around the primordial follicles could be seen grouping themselves the lutean cells, while scattered through the stroma everywhere were similar cells, just as they are sometimes found in the cat's ovary.

From this specimen, I am inclined to believe that lutean cells under this unusual condition can develop in almost every part of the human ovary. Whether this overgrowth of lutean tissue is responsible for the wild development of the syncytial layer of the chorionic epithelium on the placenta, causing the deciduoma malignum, has never been determined but does not seem impossible.

OVARIAN INSUFFICIENCY

It would seem that the internal secretion of the ovary plays a rôle in the development and metabolism of woman only during that period which begins a few years before puberty and extends to a few years after the menopause.

Entire absence of internal ovarian secretion in the years just before and during puberty leads to a failure in development of the girl so affected. The uterus and other genital organs remain small and infantile. The mammary glands do not develop. The pelvic bones maintain more resemblance to the male than to the normal female type. There may be a failure of pubic and axillary hair development.

While such extreme cases are the exception, various lesser degrees of insufficiency are common. The girl may show the general anatomic secondary sexual characteristics, but she is abnormally slow in developing, and menstruation is usually greatly altered, i. e., it may not appear at all, it may return at very irregular intervals, or be associated with extreme dysmenorrhea, or as is sometimes the case it may be almost continuous, leading to severe anemias. Some of these girls will show a great increase in the fat of the body; they constitute a distinct group; others are not fat, but extremely thin and anemic and generally poorly developed.

Marked digestive disturbances may occur. The symptoms from the urinary organs are usually slight. Generally speaking, the nervous phenomena are markedly less than those which occur at the time of the menopause. They may, however, be most pronounced, producing all varieties of neurasthenia and hysteria up to and into definite psychoses.

Normally, the change from childhood to adult life is a very gradual, and, probably, a very continuous one. It is not uncommon in young girls to have, before actual menstruation begins, several recurrent phenomena in every way suggestive of the menstrual period, with the exception that there is merely a little leukorrheal flow and no blood. In such cases, the assumption seems justifiable that the blood-vessels of the uterus are small and the corpus luteum but partly developed. When the new secretion furnished by the ovary begins to exert its influence on metabolism, there is doubtless a readjustment of all the internal secretions to meet the changed conditions and the greater the irregularity of the ovarian supply the more the disturbance must be.

At the menopause the ovaries cease functionating with the result that menstruation stops, the genital organs atrophy and the influence on metabolism is taken up by other internal secretory glands. This change is always progressive and slow; under ideal conditions it should hardly be noted in the general condition of the patient. This ideal is rarely met with, for during the period before its complete disappearance there is usually marked irregularity in the functionating of the ovaries, with resultant irregularities in menstruation, various functional disturbances of the heart, gastro-intestinal tract, the vascular system and especially of the nervous system. The degree of these symptoms varies immensely, from almost nothing to most extreme psychic and physical disturbances.

These disagreeable disturbances are so familiar to every physician that one needs only recall the heart palpitations, the rushes of blood to the head, the so-called hot and cold flushings, the general irritability, the weakness and incapacity to work to have a perfect picture of the condition.

Similar in every way but usually more stormy is the progress of the artificial menopause, which follows the removal of the ovaries at an operation. Here, however, it is of interest too that some patients show no disturbance so far as general nervous manifestations are concerned. In such the ovaries may have been taking but a small part in general metabolism.

Not only at the extremes of sexual life, but also during the intervening period many women suffer from insufficient functionating of the ovaries. In some there are periods of amenorrhea and an accumulation of fat, in some amenorrhea and nervous phenomena, in some nervous phenomena without any disturbance of menstruation. These symptoms are encountered in some cases with definite evidence of disease in the thyroid gland, the pancreas or the hypophysis; such, however, constitute a small number when compared with those in whom there is no indication of disease outside the ovary.

The indications for the use of the active principle of the internal secretion of the ovary are therefore very varied. Up till the time of L. Fraenkel's first contribution we had been using various ovarian extracts with partial success in some cases and entire failure in many. Stimulated by his report, we began in 1904 the use of corpus luteum tissue for a variety of functional disturbances. Dr. Howard A. Kelly began this work with me and has employed the substance extensively ever since. Our results have been so definite and so superior to those obtained with ordinary ovarian extract

that we have become fully convinced that the corpus luteum plays the principal, if not the entire rôle, in the internal secretory activity of the ovary, so far as it has to do with causing menstruation and so far as it represents the substance whose removal brings on nervous manifestations of the menopause It is not, however, the purpose of this paper to attempt to demonstrate that the corpus luteum extract is the active principle of the ovary or that the rest of it is inactive or that other organ extracts may not be sometimes efficacious with the same patients; it aims only to show what can be done in treating apparent cases of ovarian insufficiency in women with the corpus luteum tissue of animals.

CORPUS LUTEUM EXTRACT

Lebreton[6] began using corpus luteum in 1899 for the vomiting and other toxic symptoms which occur during some pregnancies. His results were partially favorable. Fraenkel[7] in 1910 published a review of his extensive employment of dried corpus luteum of the cow, and stated that he has had little or no success with it in relieving patients suffering with dysmenorrhea or the disturbances incident to toxemia of pregnancy. In marked contrast he has observed relief of the nervous and particularly cardiovascular disturbances of both the natural and artificial menopause, relieving about 90 per cent. of his patients. Dr. Charles A. Hill[8] of Pittsburgh has reported very favorable results in controlling the menopause nervous symptoms, following double oöphorectomy. Drevet[9] employed in Pozzi's clinic a glycerin sulphuric acid extract in the same class of cases with quite satisfactory results. Godart[10] has employed a similar prepared extract in treating patients who have suddenly grown fat and developed amenorrhea. In his cases the menstrual periods have been restored and there has been a marked reduction in the fat.

In addition to such therapeutic experiences, there have been a large number of valuable contributions bearing on the pharmacologic and toxic effects of lutean tissue. Ferroni,[11] Lambert,[12] Villemin[13] and others have shown that extracts of the corpus luteum when injected intravenously into rabbits, guinea-pigs and dogs are extremely toxic. They lead to rapid fall in the blood-pressure, paralysis of the muscular system and general symptoms resembling strychnin poisoning. On the other hand, given by mouth or hypodermically to rabbits, they are entirely non-toxic.

PERSONAL EXPERIENCES

My personal work has been done almost exclusively with the corpus luteum of the sow. In the beginning, I employed the fresh material, feeding it as a salad or raw-beef sandwich. After a little while, however, I began giving the dried product. The preparation of the substance was finally turned over to Hynson, Wescott & Company of Baltimore, who have been making it ever since. They put the gland up in the form of tablets, each of which contains 20 grains of fresh corpus luteum. These tablets deteriorate with age, but when fresh are apparently as effectual as the raw material.

EXPERIMENTS WITH DOGS

When fresh corpora lutea of the sow are taken, thoroughly cut to pieces, ground up and allowed to stand in salt solution for several hours and then filtered, there is obtained a clear fluid, which when intravenously injected into the dog causes general toxic symptoms, manifested by a general fall in blood-pressure, with final cardiorespiratory paralysis and death. This is in conformity with the experiences of all observers. A slightly different experiment was tried as follows: The animal (dog) was anesthetized and one-half of the double uterus carefully removed and put into suitable preservative; the animal was then immediately given intravenously a large dose of the extract, following which the blood-pressure was studied by a manometer connected with the carotid artery. At the end of three hours the other half of the uterus was removed. The purpose of this experiment was to determine if the injection of the extract produced any hyperemia of the uterus. Careful subsequent microscopic studies demonstrated that there was no more hyperemia after the injection than before it was given.

The above experiment was carried out on only two bitches, and the method, I know, is not conclusive in showing that luteum extract does not produce hyperemia of the uterus. Perhaps smaller doses and over several days should have been given, and better still, a sow should have been employed instead of a bitch. It would not be remarkable for the sow luteum not to be in this direction specifically effectual with the dog.

FEEDING RAW LUTEUM TO PATIENTS

My first experience was with a negro woman, aged 26, who came into the Johns Hopkins Hospital Dispensary, complaining of nothing but amenorrhea, of twelve months' standing. Examination showed a healthy, strong woman, with pelvic organs normal in size and in every other way. Her menstruation had begun at 14 years and had always been regular until the present trouble arose. This patient was admitted to the ward and was fed three times a day a considerable amount of the fresh corpus luteum of the sow. On the third day she began menstruating profusely and continued to do so for five days, when the luteum was stopped. She menstruated regularly for several periods subsequently without the product and was finally lost sight of.

The next step was an attempt to produce menstruation in three patients in whom the ovaries had been removed but the uterus left in. Two had had their operations over a year previous to the experiment; one was still convalescing in the hospital. All three were given enormous quantities of luteum, but not one of them showed any sign whatever of menstruation. From this, I conclude that when given by the mouth, even in very large quantity, the corpus luteum of the sow cannot entirely replace the normal function of the ovary of the woman, so far as producing menstruation is concerned. On the other hand, when the ovary is partially functioning, it can supplement it and relieve amenorrhea.

EXPERIENCES WITH THE DRIED PRODUCT

My experience with the lutean tablets represents personal observations of a large number of private patients in my own practice and in the practice of Dr. Howard A. Kelly.

We have used the material principally for the relief of the nervous manifestation of the real and artificial menopauses and for vague nervous symptoms which occur during the active menstrual life. In addition, we have employed it in a number of cases of amenorrhea, or infantile genital organs, in a few cases of sterility, in a number of cases of dysmenorrhea and in two cases of repeated abortions.

6. Lebreton, cited by Fraenkel.
7. Fraenkel: Arch. f. Gynäk., 1910, xci, 752.
8. Hill, C. A.: Surg., Gynec. and Obst., 1910, x, 587.
9. Drevet: Thèse de Paris, 1907.
10. Godart: Thèse de Paris, 1908.
11. Ferroni: Ann. di ostet. e ginec., 1907, i.
12. Lambert: Compt. rend. Soc. de biol., 1907, lxii, 18.
13. Villemin: Thèse de Lyon, 1908.

MENOPAUSAL SYMPTOMS

The hot and cold flushings, the extreme irritability and nervousness and other manifestations of the menopause are greatly improved in about 90 per cent. of the cases. Some patients will show no improvement whatever, and even apparently are made worse by the therapy. The patients of this class in no way seem different from the others, and the cause is not evident. The method of determining them is by the trial of the extract.

The dosage varies greatly with the individual patient; in some, one tablet, three times a day, suffices; in others, in whom we have obtained satisfactory results, the dose has been as much as eighteen or twenty tablets a day; doubtless, even larger doses might be of advantage, but the expense of the drug precludes giving much more.

Some patients complain of the taste of the tablets and occasionally of slight gastric upset; otherwise there are no disagreeable symptoms. In those patients who are relieved, the effect is generally noted within a day or two. In some patients, after the drug has been given for a few weeks, it can be stopped; in others, it has to be given continuously over much longer periods; some patients of ours have taken it for a year or more.

SYMPTOMS OF OVARIAN DEFICIENCY DURING MENSTRUAL LIFE

Certainly our most striking results have been obtained with a class of patients usually described as neurasthenics. Most of them are over 35 years of age. Menstruation is regular in its periodicity and in the duration and amount of flow, and usually there is no complaint of hot and cold flushings; the patient is simply excessively nervous, very easily fatigued by either mental or physical work, usually more so at the menstrual periods than at other times. Many will improve slowly on rest-cures; immediately, however, on trying to resume the duties of a normal life, they go back. Occasionally they will complain of slight dyspeptic symptoms and frequency of voiding. The general physical, as well as the local pelvic, examinations are entirely negative. Many patients complain of marked periods of psychic depression.

It must be clearly understood that this group of symptoms may arise from other causes than insufficient ovarian function. It is, however, astonishing how quickly and completely many such patients will respond to lutean therapy. It has been my custom to give about nine tablets a day in the ten days before menstruation, to reduce this to six after the flow begins, and in the period from the end of the flow until the next time to give three tablets a day. Often this therapy carried out for a month will give relief for many months. The result is, as it were, a reestablishment of a broken compensation between the internal secretory glands. Rest and freedom from care help in this treatment, but are by no means essential. A good example is furnished by the following case:

Mrs. P. D., aged 35, married 12 years, was the mother of six children. Menstruation was regular. She complained of nervousness, irritability, inability to carry on the household duties, and depression. All symptoms were worse at the menstrual period. This patient was first seen in October, 1911. To nine-tablet doses per diem, she responded at once; reported that she had not felt so well in years. After one month of this treatment, the dosage was reduced to three tablets a day and continued another month. She then gave it up altogether, and is still feeling perfectly well.

AMENORRHEA

The amenorrhea due to the real, precocious or artificial menopauses is not relieved by the extract. On the other hand, we have had quite striking results in the cases of functional amenorrhea both in young girls and in adult women. This applies both to the type in which much fat has been taken on and to that in which no fat has developed. The drug is also quite efficacious in many cases in increasing the amount and duration of the flow. There are, however, exceptions to this. In one patient with thyroid insufficiency and marked upset at the menstrual period, with scant flow, I was unable to obtain even with very large doses the slightest effect. Undoubtedly, the other internal secretions and the general condition of the patient play a necessary part in the question of menstruation. It is, however, my opinion that in most girls, in whom there has been some flow and in whom we have reason to believe that the ovaries are still to some extent active, the lutean tissue will produce menstruation. The following cases will serve as illustrations:

Miss M. H., aged 25, was seen Feb. 16, 1912. Menstruation began at 14, was always irregular, sometimes months elapsing between periods. She had had no menstruation for eighteen months. She had some headaches. Examination showed a rather poorly developed girl. Breasts were small, the pubic hair poorly developed, the uterus small and in anteflexion, the ovaries small but otherwise normal. An *x*-ray picture of the head showed a normal sella turcica. Patient was put on six lutean tablets per day; returned on March 8, twenty days later, reporting some improvement in headache, but no menstruation. The dose was then raised to twelve tablets a day, under which she began to menstruate on the third day, and passed through a normal menstrual period, five days' duration.

Miss A. M., May 22, 1911, aged 22, had menstruated normally from the age of 15 until one year before we saw her. She then suddenly ceased menstruating and after a while was seized with the obsession that she was pregnant. Every effort was made to disabuse her mind of this idea, but without avail. Five weeks previously to coming to Dr. Kelly, she had a retroflexed uterus suspended, but without result. The general examination showed a healthy girl, with apparently normal pelvic organs. One of the principal reasons that she argued for her pregnancy was the lack of menstruation. She was seen by an expert psychiatrist, who took charge of her case. He assured her that she would menstruate in a few days, which she did under doses of twelve tablets per diem. The return of the menstruation with the psychic treatment which she received sufficed to relieve her.

Miss L. M., May 21, 1912, aged 22, complained of amenorrhea and nervousness. The menstruation began at 13, had always been irregular, lapses of from two to eight months occurring. There was no dysmenorrhea; the flow lasted two days, and was very scant. This patient was quite fat, did not look at all ill. The general examination showed a healthy girl, pelvic organs normal but rather infantile. This patient was started on six grains of luteum per diem and after a few days began to show a trace of menstruation, which had not appeared for seven weeks. The dose was increased to twelve tablets a day when the flow became profuse and lasted in all five days, when the luteum was discontinued. She stated that she had never had a menstrual period similar to this before.

DYSMENORRHEA AND STERILITY

We have employed lutean extract in a number of patients with dysmenorrhea, giving the tablets in some cases during the entire month, and in others at the time of the menstrual period alone. The results have been so uncertain as to lead us to think that the drug does not have much of a field in relieving menstrual pain; in some cases it increased it. On the other hand, it does in some cases help the nervous symptoms.

Our use of the extract of luteum in cases of sterility has not yielded any results. In these cases, we hoped that the increased congestion might help the ovum in setting itself. Nearly all of these patients, however, suffered from leukorrhea, stenosis of the os uteri and other conditions.

REPEATED ABORTIONS

Fraenkel's work gave the hope that some of the unexplained abortions in the early months of pregnancy might be due to an absence of lutean secretion. In two of these patients, I tried the giving of large doses of luteum for several weeks. Both of them aborted just as they had previously done repeatedly about the end of the third month. I do not feel that this line of work, however, is closed. The definite opinion can be formed only after an extensive trial.

CONCLUSIONS

1. When given by the mouth, corpus luteum tissue of the sow, even in large doses, has little or no toxic effect on woman.

2. It affords us a valuable means of controlling the nervous symptoms which occur in so many patients at the time of the natural or artificial menopause, giving relief to most sufferers.

3. It is a valuable remedy in treating patients with insufficient internal ovarian secretion during the menstrual life. This class constitutes a very large number of women.

4. It is an excellent remedy to induce menstruation in young women suffering from functional amenorrhea. Those who are fat, in addition to regaining menstruation, usually, but not always, lose weight.

5. There would seem to be a possibility for the drug in cases of unexplained sterility and repeated abortions.

6. Extensive use should be made of corpora lutea from the cow, sheep and other animals to determine if these extracts work more successfully than those of the sow. The ideal lutean tissue for any animal is doubtless tissue from its own species, but this cannot be obtained for the woman.

7. So far as it goes, my work strengthens my conviction that Fraenkel is correct in attributing menstruation to the internal secretion of the corpus luteum.

8. From clinical experiences I am inclined to believe that the corpus luteum possesses different properties due to different chemicals. One of these substances causes hyperemia of the pelvic organs; another relieves nervous symptoms of a toxic character as at the menopause. It would seem that this product acts as a neutralizer, since even large doses of the lutean cause no disturbances of a toxic nature. On the other hand, the toxic results of intravenous injections of the lutean extracts as well as the nervous phenomena of menstruation show that there must also be some toxic material present which is not absorbed from the stomach or intestines. All of these various substances may in the future be separated.

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ABSTRACT OF DISCUSSION

DR. JOHN ROGERS, New York: The great difficulty is the definition of the groups of cases in which organotherapy is beneficial. It is best to define them as belonging to the fatigue or functional, rather than to the structural, organic disorders. Nearly all of these patients present a history or evidence of fatigue inability, or inability to stand stress of any character. The symptoms of which they complain may be most diverse—thyroid enlargement with hypo- or hyperthyroid symptoms, gastro-intestinal disturbance and high or low blood-pressure. The blood-pressure (in addition to the thyroid) is the single guide in the physiology of the subject. This has its origin in the "sympathetic-adrenal" or chromaffin system, as far as we know. The character of the adrenal is that of a secreting gland, therefore, subject to fatigue. Many of the cases mentioned by Dr. Burnam can be relieved by thyroid feeding as well, or almost as well, as by corpus luteum. Furthermore, treatment directed toward the genitals will relieve disturbances in a totally different part of the body, and some hypothetical physiology must be formulated to explain these phenomena. For this purpose I assume that the chromaffin system exerts a trophoneurotic effect on glandular structures. We know that the cortical portion of the adrenals has a trophic influence on the genitals, that the medullary portion of the adrenals, through its epinephrin, controls the contraction of the blood-vessels (in this region) and that the sympathetic is the only nerve-supply. The disorders which can be relieved by thyroid or ovarian feeding are usually accompanied by an abnormally high or low blood-pressure. The corpus luteum represents the only known secretory product of the ovary. If feeding with this or thyroid substance relieves symptoms which are traceable to local congestion or anemia it is possible or probable that one of three factors necessary for perfect function in any organ of internal secretion is lacking. The first factor is the nutritional matter in the blood, the second is some substance peculiar to the secretory epithelium of each gland, (in the ovary the cells of the corpus luteum) and the third is the terminal filament of the sympathetic which conveys a vitalizing element from the cortical part of the adrenals permitting or compelling the assimilation of nutrition from the blood by the ovary. When relief is obtained by feeding corpus luteum, we must assume there is some fatigue or functional defect in the product of the patient's ovary, and when this is supplied the nutritional chain is completed. A structural or organic defect cannot be thus relieved, and this must be the explanation of the failures in organotherapy, for a complete absence in any bodily secretion or structure cannot be remedied by any known means at our disposal.

DR. CHARLES MAYO, Rochester, Minn.: There is no question but that there is a correlation of the glands as described by Dr. Rogers. We are probably given a greater amount of each of them than is necessary, since we can probably get along with a tenth of the pancreas and with from a sixth to a tenth of the adrenals. One-sixth of the thyroid in the adult seems to furnish all that is necessary, though it is probably not enough for the child. In certain invertebrate types the genital organ is the anlage of the thyroid in higher animals. This suggests the relationship which exists in higher animals between the thyroid and the genital organs and which is most noticeable in the female at puberty. The thyroid is also enlarged in the pregnant woman. Vomiting of pregnancy is perhaps best treated by the administration of corpus luteum. Also the hot flashes, the cold feet and hands, the changes in circulation, etc., noticeable at the menopause, are best controlled by this extract. In young women who take on fat and who have scanty and colorless menstrual flow which may cease entirely at 28 or 30 years of age, thyroid feeding has, in some cases, been helpful. All of this supports the correlation of which Dr. Rogers has spoken.

DR. S. M. D. CLARK, New Orleans: For the last two or three years in our clinic at Tulane we have been making some observations in reference to the extract of the corpus luteum. In the beginning I was careful to caution the men not to become enthusiasts over it, and not to imagine that they had any good from its use unless it were actually there. In other words, we were skeptic. We went along gradually and after a certain time began to observe some good results which we felt could be attributed to the extract. I have used it in amenorrhea, and in postoperative nerve disturbance cases, and though there have not been uniformly good results, sufficient benefit has been observed to warrant its continuance. The point on which Dr. Burnam has instructed me is in the dosage. We have not been using so large doses as he gives. I am going to increase the dosage and watch results carefully.

DR. J. C. LITZENBERG, Minneapolis: For two years we have been using the corpus luteum in the outpatient department of the University of Minnesota Hospital. Like Dr. Clark, I feel that our results have not been such as to make us enthusiastic; also, like him, I feel encouraged. One of the first effects noticed was absence of the nervous symptoms usually associated with the menopause. One case may illustrate my meaning. The woman came into the hospital at the age of 34 with all the symptoms of a premature menopause. She gave the history of the other women of her family, who had the menopause at 35 and 36, her mother ceasing to menstruate at 35 years. We put her on the corpus luteum extract and the result was an immediate discontinuance of the nervous symptoms with scarcely any influence on the menstruation. She was continued on the extract for a long time and the menstruation began gradually to increase. Her normal menstruation was not reestablished until she had been taking the medication for about eight months. I presume that if we had given such large doses as Dr. Burnam has given, we might have obtained earlier results. We have other cases in which the results have been the same.

DR. EMIL NOVAK, Baltimore: It seems to me that for the present our employment of the corpus luteum extract must be in large measure empirical. In the first place, it must be borne in mind that the work of Fraenkel has not been generally accepted. Loeb, for example, has arrived at conclusions almost diametrically opposite to those of Fraenkel. According to Loeb not only is the corpus luteum essential to menstruation, but, as a matter of fact, it lengthens the sexual cycle, preventing the occurrence of menstruation and increasing the duration of the intermenstrual period. The work of Halban, moreover, seems to indicate that perhaps the ovary is not quite so essential to menstruation as we have been in the habit of believing. This investigator brings forth evidence to show that the ovary is not the primary cause of menstruation, but that it is only the activator of some underlying stimulus arising in some other organ, most probably the ductless glands. The administration of corpus luteum in cases of amenorrhea must be founded on individualization of the cases, on our ability to discriminate the underlying cause of the disturbance whenever possible. In any of these cases it would seem that the pituitary body is more closely bound up in a causative way than in the corpus luteum. If this be the case the treatment would very rationally consist in the administration of pituitary extract rather than that of corpus luteum. This is especially true of those cases of amenorrhea associated with adiposity which there is now much reason to believe are of pituitary origin. I have employed corpus luteum in a limited number of cases of the type indicated by Dr. Burnam, but on the whole the results have not been very striking. Advance along these lines, I repeat, may be expected when we are better able to distinguish the underlying cause.

DR. C. F. BURNAM, Baltimore: The question of the hypersecretion and hyposecretion of the internal secretory glands is a live one, but still obscure. It is certain that other glands can vicariously assume the functions of the ovary to a large, if not complete, extent. What I desire to emphasize now is, first, that when taken by the mouth, lutean tissue is nontoxic; second, that large doses often act when small doses fail; that it is an efficient product for inducing menstruation in cases of amenorrhea; furthermore, patients with scant menstruation, when given twelve tablets a day, will have normal periods. The symptoms, such as hot flushings, nervousness and sweatings, characteristic of the normal and artificial menopauses, can be greatly relieved. I have tried thyroid and pituitary extracts for these conditions, but have not secured satisfactory results. Everybody is thinking and many are working along this line and the results which will add to our therapeutic means are sure to come. I feel that I have made just the slightest beginning in this direction.

The Essentials of a Good Doctor.—It takes a good man to make a good doctor. It takes a sensible man to make a wise doctor. It takes an honest man to make an honest doctor. It takes a virtuous man to make a trusted doctor.—S. D. Swope in *New Mexico Medical Journal.*

PUERPERAL INFECTION

A STUDY OF SOME OF THE MOST INTERESTING AND PRACTICAL FEATURES OF THE DISEASE *

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From the study of recent literature and also from personal observation, I am impressed by the great difference of opinion that exists concerning the treatment of puerperal infection. My investigations indicate that too much local treatment continues in use, mostly the result of tradition. The clinician has not kept pace with the pathologist in the study of infections and immunity.

I. EXTRACTS FROM GERMAN AND AMERICAN LITERATURE ON PUERPERAL INFECTION

Schottmüller[1] is credited with reawakening interest in study of anaerobic infection in puerperal sepsis; he showed anaerobes in the blood and demonstrated that they are a frequent cause of thrombophlebitis.

Bondy[2] reports one hundred abortions, of which eleven were from anaerobic streptococcus infections. In one of these cases he obtained the anaerobic streptococci in pure culture from the blood and in one from a pelvic exudate.

Fellner[3] believes in non-interference except when retained tissues cause severe intoxication.

Palmer Findley[4] is of the opinion that in virulent streptococcus infection it is better to encourage spontaneous expulsion by ergot; failing, the uterus must be emptied by mechanical means, the finger preferred.

Mayer[4] would remove placental rests with the least possible injury to the uterus and at the earliest possible moment.

Fromme[5] believes in prompt removal of placental remains in cases not streptococcic. He irrigates, packs twelve hours, then cleans out with the finger. If hemolyzing streptococci or liquifying staphylococci are present, the placental remains are not removed unless chills occur or fever greatly increases.

Harrar[6] advocates intra-uterine douches in puerperal infections with streptococci or the colon bacillus. In cases of infection with other organisms he believes douches are not indicated.

Montgomery[7] believes generally in non-interference, although he advocates operation in all cases in which occur localized collections of pus.

Pankow[8] favors hysterectomy in severe, virulent infections.

Polak[9] advocates digital exploration of the interior of the uterus to ascertain its contents; needless to say, a well-contracted uterus with closed cervix is not entered. In putrid or saprophytic endometritis the uterine contents are removed with the finger or placental forceps.

* Read in the Section on Obstetrics and Gynecology of the American Medical Association, at its Sixty-Third Annual Session, held at Atlantic City, June, 1912.

* I am indebted to my associate, Dr. Arthur H. Curtis, for a perusal of all of the indexed literature on puerperal infection by American and German authors for the last two years and for valuable suggestions.

1. Schottmüller: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1909, xxi, 450; München. med. Wchnschr., 1911, lviii, 557, 787, 2051, 2123, 2170.
2. Bondy: München. med. Wchnschr., 1911, lviii, 2354; Monatschr. f. Geburtsh. u. Gynäk., 1911, xxxiv, 536; Zentralbl. f. Gynäk., 1911, xxxv, 297.
3. Fellner: Berl. Klin., 1909, xxi, 1.
4. Findley: Interstate Med. Jour., 1911, xviii, 1082.
5. Fromme: Prakt. Ergebn. d. Geburtsh. u. Gynäk., 1909, i, 355; Monatschr. f. Geburtsh. u. Gynäk., 1911, xxxiv, 645.
6. Harrar: Am. Jour. Obst., 1911, lxiii, 599.
7. Montgomery: Tr. Am. Gynec. Soc., 1910, xxxv, 215.
8. Pankow: Ztschr. f. Geburtsh. u. Gynäk., 1910, lxvi, 215.
9. Polak: Tr. Am. Gynec. Soc., 1910, xxxv, 221; Am. Jour. Obst., 1911, lxiv, 461.

The uterus is then packed for half an hour with gauze soaked in iodin. Nothing more is done after removal of the gauze. He believes that vaccines of all forms are useful in puerperal sepsis.

Ries[10] would leave the uterus alone except for hemorrhage.

Mermann's[11] rule is never to examine any case post partum, irrespective of fever, except when hemorrhage occurs or when symptoms and external examination show a likelihood of a vaginally accessible exudate.

Schottmüller[1] is of the opinion that expective treatment is not productive of as good results as active treatment. This includes all types of infections. He obtained positive blood-culture in five out of fifteen cases of anaerobic *Streptococcus putridus*. Positive blood-cultures were obtained two times in fifteen cases of hemolyzing *Streptococcus erysipelatis*. He concludes that hemolyzing streptococci and the anaerobic *Streptococcus putridus* are of almost equal frequency in puerperal infections; *Bacillus coli*, staphylococci and the Welch bacillus are found much less frequently.

Sachs[12] advises as follows:

1. In cases with infections spread beyond the uterus, never give intra-uterine treatment.
2. If no extension occurs beyond the uterus:
   A. If no hemolyzing streptococci, remove the uterine contents. This is preferable to expectant treatment and does no harm.
   B. In the presence of hemolyzing streptococci, let alone.
3. In cases of infection with anaerobic organisms, further study is desirable.

Semon[13] has never seen non-hemolyzing streptococci in the blood-cultures of puerperal infections.

Venus[14] in acute thrombophlebitis removes the uterus and ligates the pelvic veins. Lenhartz and Trendelenberg claim that thrombophlebitis is present in 50 per cent. of the cases of puerperal infection that come to post-mortem.

Veit[15] practically rules out all indications for hysterectomy in puerperal infection. If only avirulent streptococci are present, he cleans out the uterus. Expectant treatment is advised if hemolyzing streptococci cause the infection.

Vineberg[16] advocates hysterectomy in selected cases. Acute salpingitis and ovaritis of puerperal origin he treats by an extraperitoneal incision parallel with Poupart's ligament. He advises against extensive intra-uterine treatment.

Winter's[17] routine treatment:

1. Cultures are made.
2. Vaginal examination is then made.
3. If no hemolyzing streptococci are found it is permissible to clean out the uterus, but Winter usually waits a week or more for expulsion of the uterine contents.
4. If hemolyzing streptococci are present, local treatment is advised against.
5. If parametritis exists, the uterine cavity must not be touched.

Zangmeister,[18] from bacteriologic work, concludes as follows: Streptococci (hemolyzing and non-hemolyzing) are responsible for 86 per cent. of post-abortive and puerperal infections. Streptococci are present in the vaginas of 32 per cent. of pregnant women. During the first ten days of the puerperium they are present in 43 per cent. Hemolyzing streptococci are never found in pregnant women before labor. During the puerperium they are present in 13 per cent. The treatment advocated by Zangmeister is as follows:

1. With retained tissues, he would leave to Nature.
2. In cases of retained tissues, he agrees with Winter.
3. With abscesses and exudates, he will incise only when pointing. Concerning ligations of the pelvic veins, Zangmeister agrees with Bumm that this is of no value in acute cases, and that the value of ligation in chronic cases is beyond a doubt.

From personal observation, especially as regards the family physician, I find that, in most cases of puerperal infection, curettage, douches and intra-uterine medication are common treatment. Most of my patients with puerperal infection had been subjected to these remedies before they were sent to the hospital.

II. PATHOLOGY—A SUMMARY OF SOME CHANGES ON WHICH THE TREATMENT SHOULD BE BASED

The disease is essentially systemic. It has ceased to be local after fever has developed; the bacteria probably soon invade all the tissues of the body. The following facts support this statement:

1. The bacteria easily gain direct access to the general circulation through the infected thrombi in the uterine sinuses.
2. The lymphatic vessels are large and active.
3. Blood-cultures frequently show the presence of bacteria. Negative results from blood-cultures are probably due to the absence of delicate tests, and are often due to the fact that anaerobic cultures are not made.

Evidences that the infection is essentially systemic are:

1. The severity or duration of the disease show little or no relation to the presence of remnants of conception or inflammatory pelvic reactions.
2. The severity and duration of the disease depend mostly on the virulence of the invading bacteria and the time required to develop a general immunity.
3. The temperature curve is much the same as in many of the other general bacterial infections.
4. Excision or incision and drainage of abscesses do not usually lessen the severity or shorten the duration of the disease.
5. The presence of inflammatory exudates is not an essential feature of the disease, as they are largely accidental, depending on the amount of irritation the infective material may produce and on emboli that may result.

The fact that in offensive cases the patients seldom die with expectant treatment is interesting and possibly suggestive of the relation of putrefactive to the more virulent bacteria. The presence of putrefactive bacteria in cases of mixed infection may diminish rather than add to the virulence of the other bacteria.

Cultures from the uterus have a large element of uncertainty, as Rosowsky[19] found in the vaginal discharge of sixty-one normal non-pregnant women the

10. Ries: Physician and Surg., London, 1909, xxxi, 385.
11. Mermann: Arch. f. Gynäk., 1907, lxxxii, 28.
12. Sachs: Zentralbl. f. Gynäk., 1912, xxxvi, 193.
13. Semon: Monatschr. f. Geburtsh. u. Gynäk., 1911, xxxiii, 148.
14. Venus: Centralbl. f. d. Grenzgeb. d. Med. u. Chir., 1911, xiv, 484.
15. Veit: Prakt. Ergebn. d. Geburtsh. u. Gynäk., 1910, i, 1; ii, 223.
16. Vineberg. Tr. Am. Gynec. Soc., 1910, xxxv, 237; Surg., Gynec. and Obst., 1910, xi, 30.
17. Winter: Med. Klin., 1910, vi, 127; Zentralbl. f. Gynäk., 1911, xxxv, 569
18. Zangmeister: Prakt. Ergebn. d. Geburtsh. u. Gynäk., 1910, i, 395.
19. Rosowsky: Zentralbl. f. Gynäk., 1912, xxxvi, 4.

anaerobic *Streptococcus putridus* in 40 per cent. Zangmeister[18] found hemolyzing streptococci in 13 per cent. of women during the puerperium. Winter[17] states that approximately 33 per cent. of women have virulent streptococci in the vagina. Numerous observers have reported the frequent presence of virulent bacteria in the lochia of afebrile cases. Blood-cultures are the only means at present for accurate diagnosis of the variety of infection. Although bacteriologic examination is not of much value as yet to the patient, it should be done as an interesting, instructing and fruitful research problem.

III. LOGICAL METHODS OF COMBATING THE INFECTION

The disease is essentially systemic and should be treated chiefly by general remedies.

As puerperal infection is a combat between the invading bacteria and the body resistance, the logical treatment resolves itself into the use of remedies to injure the bacteria or to strengthen the resisting forces of the body. As yet no remedies are known that directly limit the growth or destroy the bacteria of puerperal infection.

1. It should never be emptied, except for hemorrhage.
2. It should always be emptied, except when hemolyzing streptococci or pelvic inflammatory exudates are present.
3. It should always be emptied when products of conception are known to be present, irrespective of bacteriologic findings.

Never to explore or empty the uterus except for hemorrhage seems to me to be consistent with the modern interpretation of infection and immunity. The infected uterus, if left alone, will soon spontaneously expel any retained products of conception. There is no evidence that the presence of such tissue increases the growth or virulence of the more dangerous bacteria. Emptying the uterus removes most of the bacteria of decomposition, but they are often if not always associated with virulent bacteria and are not of much importance as regards health or life. Curetting with the finger or instrument produces raw surfaces, disseminates the infection, may dislodge septic thrombi and thus produce embolic infections and pelvic inflammatory exudates.

TABLE SHOWING RESULTS OF OTHERS

Name	Cases Treated	Percentage Cleaned Out	Method Employed	Other Operations	Percentage of Mortality	Treatment at Present Advocated
Bondy.....	420	100	Finger or curette.	.....	8.7 of febrile cases.	
Polak.....	200	All except cases with cervix closed.	Finger or forceps; ½ hour iodin-gauze pack.	Prior operation, 12 cases.	3.0	Digital exam.; removal with finger or forceps; pack uterus one-half hour with iodin-soaked gauze.
Schottmüller.	1,000 abortive febrile and afrebile.	.....	.....	.....	3.0	In experience of Schottmüller expectant treatment is not accompanied by as good results as is removal by use of finger, even in cases of streptococcus infection. Thinks question not definitely settled by our present knowledge.
Schottmüller.	70 infective with hemolyzing streptococci.	81	Finger.	.....	5.2 of cases cleaned out; 30.7 of cases treated expectantly.	
Winter.....	100 abortive with "septic infection."	.....	.....	.....	13	Abortion with no infection, cleans out the uterus; if no hemolyz. strep., cleans out only if high fever, severe intoxication or if placenta remains in uterus a week or two; if hemolyz. strep., is extremely slow in considering any invasion of uterus; if parauterine infec., does not touch uterus.

The use of vaccines and serums continues to be in the experimental stage, with the possible exception of colon bacillus infection. To increase the body resistance one has to depend chiefly on food, liquids, rest, sleep, cheerful surroundings and general hygiene. The use of a large amount of liquids to dilute the toxins and to promote elimination is an important part of the treatment. I have found that these patients usually improve very rapidly when they can be kept out of doors much of the time. With the out-door treatment they usually are able to assimilate a large amount of food and to procure much sleep. Anodynes and sedatives when indicated are given, but stimulants are not used, as rest, not action, is needed. I believe that much of the local treatment and operations that have been and continue to be so generally used favor the bacteria and injure the resisting forces of the body.

IV. LOCAL REMEDIES

The greatest amount of difference of opinion in the treatment of puerperal infection obtains in the indications for surgical intervention. The various opinions as regards the indications for emptying the uterus may be classified as follows:

In case of hemorrhage which means separation of decidua or placenta, a gauze pack in the vagina or in the lower uterine segment will stop the bleeding and hasten spontaneous expulsion of the retained tissue. There is more danger of surgical intervention in the absence than in the presence of a pelvic inflammatory exudate, as in the latter instance the vessels are "blocked."

It would seem inconsistent to advise curettage in mild infections and to advocate non-interference in infections due to hemolyzing streptococci. It suggests that some patients are "too sick to be treated," that some have not enough strength to tolerate the treatment. It is difficult to appreciate how a treatment that is dangerous for the very ill can be of much value to those not so sick.

What of the so-called saprophytic cases in which removal of the decomposed tissue is often soon followed by recovery? Even in these cases it would seem better to await spontaneous expulsion or to use gauze packing rather than to traumatize the tissues. In none of these cases can one be certain that a mixed streptococcus infection is not present. There is some objection to the use of gauze as it obstructs drainage, but I believe it is the lesser of two evils. It is not uncommon in these cases to have the temperature drop to normal in the morning,

without removal of the placenta, after it has been up to 103 F. or 104 F. the previous night. Retained tissue will soon be expelled spontaneously. If there is not a virulent mixed infection, the retained tissue does not much prolong morbidity and does not endanger life. If the retained tissue contains virulent bacteria, the traumatism resulting from interference is dangerous.

The use of douches in puerperal infections is of historic interest only.

V. PELVIC INFLAMMATORY EXUDATES

In non-puerperal cases, gynecologists agree that operations should seldom be done during the acute period of the disease. There is less indication and more objection to operation in the acute puerperal than in the acute non-puerperal case. In the puerperal case the exudate in nearly all cases entirely disappears by absorption. This exudate is less amenable to surgery than the non-puerperal. The tissues changing by involution and the parturient patient have a relatively diminished resistance to surgical interference. The exudate rapidly disappears spontaneously after a general immunity has developed. To attempt drainage of a solid exudate usually means a secondary infection. Even with cases with suppuration, the abscesses are generally multiple, can not all be drained, and secondary infections are nearly certain to result. In a few cases the abscess will point to the surface, generally in secondary colon bacillus infections, and indicate incision and drainage.

VI. HYSTERECTOMY

Hysterectomy is very seldom indicated. The patients infected with hemolyzing streptococci will usually die when hysterectomy is done, and that in the other infected cases the patients will live without hysterectomy would seem to be a conservative statement

VII. ABDOMINAL SECTION FOR THROMBOPHLEBITIS AND GENERALIZED PERITONITIS

The valuable work of Williams and Trendelenburg is interesting and suggestive. I have not done this operation, and have had but one case of thrombophlebitis in which excision of the affected veins might have been of value. The operation would seldom, if ever, seem to be consistent with the modern interpretation of infection and immunity.

Abdominal section for suppurative peritonitis may have a limited field. The patients of this kind, operated on early in our practice, who were treated by abdominal section, died. The operation to be of value would have to be done early in the infection. Most of these cases could probably be as well treated by free puncture and postural drainage through the posterior vaginal fornix as by abdominal section. We have had but one case in which puncture through the posterior vaginal fornix seems to have been of value.

VIII. PERSONAL OBSERVATION

Eighty-nine cases are included in my series which dates from seven years ago, when operative interference was discontinued in acute cases except in rare individualized instances. Nearly all of the patients were the severely infected ones who are usually referred to the hospital. The greater proportion had been curetted one or more times and had received intra-uterine antiseptic douches.

Of the eighty-nine patients, eight died. Six deaths were from generalized peritonitis and the patients were in a hopeless condition when admitted to the hospital. One died from large multilocular pelvic abscess, colon bacillus infection, which was incised and drained, and terminated in generalized peritonitis and death. The other died from a hemolyzing streptococcus infection with numerous mycotic emboli.

Local treatment was employed more in my earlier cases and all except two deaths occurred in the first half of our series. With the progress of time less operative work has been practiced, with coincident decrease in morbidity and mortality.

Fifty of the patients received supportive treatment only. In the thirty-nine other cases the treatment was mostly expectant. About 50 per cent. of our patients have had pelvic exudates. Nearly all of the patients with exudates had had intra-uterine treatment before they came under my care. In only one instance in the last sixty-nine cases, that of a metastatic abscess in the gluteal region, was drainage made. The exudates varied in size from slight thickening to masses that extended nearly to the umbilicus. There was usually very slight diminution in size during the acute period, but when the temperature became normal—when a general immunity had developed—the absorption was very rapid. Some of the patients had slight relapses of fever for two-day or three-day intervals. In all of the cases the exudate had practically disappeared when the patient left the hospital. The average stay in the hospital was about three weeks.

IX. CONCLUSIONS

1. Puerperal infection is essentially a systemic infection; the treatment should be chiefly general.

2. The only general treatment of established value consists of remedies which strengthen the body resistance, hastening the development of general immunizing bodies.

3. Retained products of conception should be left to escape spontaneously. In individual instances gauze packing should be used to check bleeding, to hasten separation of the tissues and to stimulate uterine contractions.

4. Pelvic inflammatory exudates usually will disappear entirely by absorption; exceptional cases, usually secondary colon bacillus infections, require incision and drainage.

5. Cases of suppurative peritonitis should be operated on early.

6. The vigorous operative treatment that is often used is more dangerous than the disease.

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ABSTRACT OF DISCUSSION

Dr. David J. Davis, Chicago: There can be little doubt that the main theme which this paper discusses—namely, the systemic character of these infections—is fundamentally correct; and, furthermore, that the method of treatment advocated is, generally speaking, based on sound pathologic principles. Acute infections in all parts of the body in many respects behave much alike, though anatomic relations are important. An acutely inflamed appendix, for example, early in the process can be easily removed with practically all the infected tissue, and there is little danger of spreading the infection. This is on account of its peculiar anatomy. The uterus, on the other hand, especially during the puerperium, is a very different organ. Here is a loose, spongy, highly vascular tissue intimately connected with neighboring parts through lymphatics, blood-vessels, etc., and excellently adapted for absorption of bacteria and their products. Naturally, there exist all grades of infection.

Generally speaking, immunity factors, as, for instance, the phagocytes, are more sensitive to external agents, antiseptic fluids and the like, than bacteria. Also mechanical interference might remove some bacteria, but with them it would remove defenders of the body and open fresh wounds for further invasion of bacteria, scattering them about or perhaps forcing them deeper into the tissues. In many ways the acutely infected uterus resembles the acutely infected tonsil with deep crypts crowded with bacteria. We do not advise gouging out or extirpating a tonsil when in an acutely inflamed condition, because experience has shown it to be disastrous.

The systemic effect of puerperal fever is, as has been stated, due to absorption of bacterial products or general invasion by germs. The former takes place undoubtedly in every case. The direct invasion of blood-streams often occurs, as shown by the positive blood-cultures so often obtained. It should be pointed out that in reality invasion of the blood-stream is undoubtedly more common than positive blood-cultures indicate, common as they are. Bacteria are not thrown into the circulation from such infected foci always in a continuous stream, but often from time to time in masses in the form of small infected emboli. Such masses may soon be destroyed, and in a short time the blood be sterile again. One can therefore understand that positive blood-cultures may depend on obtaining blood at a time coincident or nearly so with such an embolic distribution. I think it is probably true as in typhoid, pneumonia, possibly tuberculosis and other infections, that bacteria probably may be found in the circulation sometime during the course of the disease in practically all cases of puerperal sepsis.

DR. H. J. BOLDT, New York: We may not be able to draw a conclusion as to prognosis from the result of our blood-culture. When we have something left in the uterus and there is the slightest evidence of an elevation of temperature, it does not seem to me that it is proper at any time to wait until that temperature rises sufficiently to endanger the life of the patient. Whether it be a saprophytic or septic infection, we do not know how soon that infection will become dangerous. The main point is that when something is in the uterus to get it out as soon as possible and with as little traumatism as possible. I never use a curet in such cases.

DR. J. O. POLAK, Brooklyn: When an exploration with the finger reveals the presence of something within the uterus the contents should be removed, but we should stop there with our intra-uterine treatment. Each case of puerperal infection has to be diagnosticated and treated on its clinical and bacteriologic findings. We must determine in each particular case: 1. Is the uterus empty? That is the starting point. 2. Has this infection spread beyond the uterus into the parametrium, or is it in the blood? 3. If in the blood, what is the character of the infection? 4. What is the resistance of the individual patient? The first point is met by the exploration of the uterus with the gloved finger to know that it is empty. If it is not, its contents should be removed with the very least trauma. The method is determined by the period of pregnancy. Although one may use a curet in a pregnancy before the eighth week, the curet should never be used in midpregnancy or the later months. The finger is the only method that will give satisfactory results. If the material cannot be completely removed with the finger, packing the uterus with gauze saturated with tincture of iodin and leaving it in the uterus for twenty minutes will remove the detritus. The high Fowler position to attain postural drainage has its largest field in puerperal sepsis. If a woman has a rise of temperature and she is placed in this position, the temperature will improve if nothing else is done. This can be carried out in every home, and it secures uterine drainage.

DR. C. O. THIENHAUS, Milwaukee, Wis.: About five years ago many a patient suffering from puerperal septicemia was curetted and maltreated with iodin over and over again, and without question many a woman lost her life on account of this pernicious polypragmasia. To-day, Dr. Watkins goes to the other extreme and advocates absolute apragmasia, and believes that we should rely entirely on the *vis medicatrix Naturæ*. To this, however, I cannot agree. To leave pieces of stinking placental tissue within the uterus, so that the surroundings of the patient get unbearable and even tympania uteri may ensue, is, I believe, conservatism going a little too far. I agree with Dr. Boldt and the other speakers that if placental tissue is left within the uterus, it should be removed carefully with the finger.

DR. J. B. DELEE, Chicago: I wish to support the position taken by Dr. Watkins. I base my judgment on the results of the treatment of a large number of cases in the service of the Chicago Lying-In Hospital. In view of the great diversity of opinion on this subject, I would recommend the appointment of a commission to decide it as far as we can, and report at our next meeting; i. e., whether or not a uterus containing infected placental remains should or should not be emptied. The Germans decided in the affirmative on this point, but not unanimously. At a recent meeting in Chicago the sentiment of the discussion was that infected placental remains should be removed.

DR. GEORGE M. BOYD, Philadelphia: The practice of curetting in the abortion case with a dull or sharp instrument has led to the curetting of the uterus in the early stage of the puerperium, and that use of a dull or sharp instrument for investigation early in the puerperium, I take it from my own experience, is harmful in many ways. It is an old story. I remember Lusk giving out the conservative word twenty years ago at a meeting of the New York Obstetrical Society, cautioning those who were advocating instrumental interference against the dangers, speaking of the formidable results which usually followed in these cases. To go carefully into the history is a very important point in every case of infection. This will reveal the variety, focus and extent of the infection and will tell whether or not the uterus is empty.

DR. T. M. BURNS, Denver: I have irrigated the uterus and found the temperature lower the next day. I have omitted irrigation the following two days and found the temperature no lower. On the third day I have reirrigated and have found the temperature lower than after the first irrigation. I have done this for the purpose of showing the effect of uterine irrigation. I have given a sweat by means of weak, hot lemonade in a number of cases with very gratifying results and have seen no harmful effects. In the onset of typhoid fever following the sweating the temperature sweeps up, while in puerperal infection the opposite occurs.

I have seen curettage do good and have seen it do harm. I have curetted the uterus in thrombophlebitis with excellent results. I have employed hot fomentations in about twenty cases of thrombophlebitis, and in all immediate relief was obtained and never any signs of embolism. Sustaining treatment and suggestion are always of great value. Some infected patients die of fright.

DR. E. G. ZINKE, Cincinnati: Puerperal infection is so varied and so different, even at different times in the same patient, that it is utterly impossible to present a clear picture of what you have in your mind within three minutes. Dr. DeLee has presented the subject, about as nearly as possible, from my own point of view. I agree with many of the statements made by Drs. Watkins and Curtis. I agree with Dr. Boldt that the uterine cavity should be emptied gently. It can be done gently. Under no circumstance would I permit a woman with a puerperal infection to go on with a mass within the uterine cavity, no matter what the period of gestation. I know the difference in the several puerperal infections, and the avenues which these infections may pursue, whether by the blood-vessel route, by way of the lymph-channels, or whether the poison finds its way directly into the circulation. And this makes all the difference in the world. In cases in which the *Streptococcus septicus* gets into the circulation at once, unless the germ is not very virulent, the patient is hopelessly lost from the start. Unless the woman's resisting powers, the army of defense, is thoroughly prepared to fight the enemy which has entered the system, little can be accomplished with drugs; nevertheless, the parturient tract must be cleared and kept clean. Again, it is different when the blood-vessel route becomes involved. Uterine irrigation in a uterus no longer the site of disease cannot affect the progress of a thrombophlebitis. We know that many of the cases of streptococcic infection, with extensive thrombophlebitis, recover spontaneously. The life of the germ

is limited; absorption of the thrombi takes place; the caliber of the vessel is reestablished and the circulation restored.

DR. SWITHIN CHANDLER, Philadelphia: It seems to me that it may clear the subject a little if we would endeavor to classify the varieties of septicemia. In our institution in Philadelphia we have classified (due to my suggestion) the puerperal septicemias in three varieties: the hemic, abdominal and pelvic. In the hemic variety we have the invasion of the blood-vessel system. In these cases we find post mortem no septic material in the uterus. In these cases it is our belief that there is no justification of operative interference. In the abdominal cases there has been great abdominal swelling with pus from the pelvis up to the diaphragm. It seemed as if every part of the abdominal cavity was covered with infection, and in these cases it is absolutely impossible to recommend any treatment except the vaccines, and in our experience they have been unsatisfactory. In fifteen cases in which the vaccines were used they produced an exaggerated irritation of the kidneys and casts in the urine. In one case, twelve hours after using the vaccines, the woman was taken very much worse, although I cannot say that the condition was the result of the treatment. She vomited and purged and had the typical gastro-enteritis accompanying these septic cases. The pelvic variety, it seems to me, is the only form in which we may have an operation of any kind. I believe that if you have an exudate there, it is better to leave it alone unless you have the formation of pus. If you believe that the abscess will not break until the acuteness of the attack is over, it is infinitely better to wait and operate then.

DR. JOHN A. MCGLINN, Philadelphia: In going to the Medico-Chirurgical Hospital in response to a call in regard to a case of puerperal sepsis, I have no fixed idea of what I am going to do for that particular case. It is a mistake to have a fixed routine to follow in every case. The cases present so many very different phases clinically that we have to treat each case as it presents itself. To my mind there are certain principles in puerperal sepsis which we should follow. If the uterus is occupied with a putrient mass I believe it should be emptied at the earliest possible moment with the least possible trauma. If there is an abscess opening into the posterior culdesac which can be opened without particular trouble, we should remove the pus. I do not believe that, as a general rule, we should open the abdomen and remove the pus in these cases, following up the procedure by hysterectomy. For localized infection I believe the Fowler position will tend to save many cases. That and supportive treatment are methods which I believe we can adopt as sheet-anchors, but we have to vary the treatment to the individual case. One point not sufficiently emphasized is that of etiology. I do not believe that any man teaching obstetrics and gynecology at the present time advises that the puerperal uterus should be curetted with a sharp curet, but the general practitioner gets the idea from some place, because many of them are doing it. If the teachers would emphasize the fact that Nature is the best obstetrician and that a patient should be let alone unless there was some reason for interfering, we would have fewer cases of puerperal infection, and we would not have a discussion on how to cure, but rather on how to prevent.

DR. C. A. RITTER, Kansas City, Mo.: The best barrier against infection is a healthy woman. If the patient is constantly under care of the attendant during gestation, that he may note and early combat the various danger signals as they arise, strict antiseptic precautions had, as to physician, nurse, patient, bedding, instruments and dressing during labor and puerperium; vaginal examinations reduced to the minimum, due care had in repairing lacerations, infection would be rendered less frequent; hence, morbidity and mortality would be greatly reduced. Too little attention is given to drainage. The old idea that the patient should lie on her back for nine days is positively unphysiologic. It is our custom, after the first twenty-four hours, to put the patient in the semi-Fowler position, thereby securing constant drainage and favoring early involution, for a soft uterus invites infection, against which a hard and well-contracted organ is a barrier. It is surprising to note, in consultation, how frequently, and we might say, ignorantly, the uterus is entered. The first rise of temperature, a slight offensive discharge, is regarded as sufficient indication for the use of a curet, thus breaking down Nature's barriers and often converting local into general infection. In the presence of infection, with retained products of conception, the uterus should be thoroughly emptied with the least possible traumatism, and free drainage, coupled with supportive treatment, should be secured.

DR. A. D. WILLMOTH, Louisville: Most of the speakers have assumed that the infection was introduced through the vagina and uterus. I believe a large percentage are attributable to disease in the tube at the time the woman is pregnant, over which we have no control. If that is true, then we are not liable for the large percentage of cases indicated by the trend of the discussion. From a medicolegal standpoint I believe we would be held responsible largely for all cases occurring under the care of the obstetrician if the infection enters through the vagina and uterus.

We must differentiate between the sapremic and septicemic cases. In one instance, as referred to by Dr. Zinke, you have a nidus of infection which has to have time for decomposition before you get the chill, fever, etc. In the other instance, you have the fatal condition starting immediately and nothing will be gained by interference with the uterus. In the sapremic condition local treatment is indicated.

DR. T. J. WATKINS, Chicago: We have heard a good many opinions about emptying the uterus. Although these opinions are interesting, personal opinions are not very valuable unless they are backed up by some reason and observation and by careful reports of a number of cases. To say that a man empties the uterus and the patient recovers does not mean much. If it means anything it means only that the patient may have recovered as a result of the treatment or in spite of it. We may divide these infections into purulent and non-purulent. If we have saprophytes alone the uterus should be emptied. But how can we tell the condition present if investigators tell us that 40 per cent. of the lochia in non-febrile women during the first ten days contain streptococci? Bacteriologic examination, as has been pointed out, is uncertain. Take it for granted that we do have a saprophytic infection and that we do not empty the uterus, what will happen? An infected uterus that contains retained tissue will soon empty itself. It is not dangerous. If we remove the retained tissues the woman's morbidity will be slightly shortened, but there will be no difference in the mortality. Suppose, on the other hand, that the sapremic infection is mixed with the saprophytic. Many are of the opinion that streptococcic cases should not be touched. We believe that one of the greatest dangers of manually emptying the uterus consists in dislodging septic thrombi causing embolic infection. Nearly all the patients sent to us with "septic" infection have been curetted. An extremely interesting experience in this line has been cited in regard to retained placenta in animals. You may know that the cow is very liable to this complication and that 5 to 6 per cent. have retained placenta. These cases are left to Nature. They are not touched, although the umbilical cord is exposed to infection. The placenta is almost always expelled on the ninth or tenth day. These cows never die. I never heard of but one, and that was one in which the veterinarian said the placenta should be removed and he removed it.

Childbirth After Pubiotomy.—P. Deus reports seventeen cases from the Berlin Charité maternity and compares them with others from the literature, his material embracing sixty-eight cases of delivery in women who had previously been pubiotomized. He tabulates this material under various headings. The possibility that the pubiotomy can modify conditions so as to facilitate future deliveries he says is abundantly proved by these experiences; the pelvis may be permanently enlarged or it may stretch more readily in later childbirths. These favorable results were evident in 31.8 per cent. of the total cases; an absolutely negative result is recorded in only 15.2 per cent. The final instalment of his article appeared in the last *Gynaekologische Rundschau*, 1912, vi, 435.

THE RADICAL TREATMENT OF ABORTION WITH OBSERVATIONS ON AND AN ANALYSIS OF 3,500 CASES *

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The term "abortion" has come to have both a social and a pathologic significance, and while this paper is intentionally occupied with the latter phase of the subject only, it is impossible to ignore entirely the social difficulties complicating the situation. The truth of this will be sufficiently elucidated as we follow the analysis.

There is a second class of difficulties meeting us at the outset of discussion due to the popular ignorance which neither reports nor treats abortions until after they have brought such evils in their train as may only too frequently be expected to follow neglect.

These last might properly be termed educational difficulties, and to meet them a series of articles is needed for the public rather than for this present audience, in order to demonstrate how cumulative and progressive is the tendency of neglected abortions to produce future interrupted pregnancies and resulting uterine disease.

That a woman with a past history of abortions or premature labors will be less likely to carry succeeding children to term is demonstrated by the fact that in the following record, for example, 26.68 per cent. of the women having abortions or premature labors acknowledged previous abortions; more than 9 per cent. of these had aborted more than twice previously, and in more than 1 per cent of the cases the present abortion was at least the sixth. There were several patients with nine, ten and eleven previous abortions, and two women had reached their fourteenth and fifteenth interrupted pregnancies, respectively, without one living child. That there were many women who could not give a very clear record and did not know how many times they had aborted, and sometimes did not know if they had or not, denotes a somewhat lamentable lack of intelligence — or in some cases, doubtless, of honesty — on their part; but this is not wholly unnatural when one considers that the expulsion of the ovum may seem to be merely a belated menstruation accompanied by a clot of blood, the expelled ovum varying from the size of one's thumb nail to the size of two fists or more.

The woman of the people who must be up and about her tasks in the midst of slatternly surroundings, with little or no privacy, and with no one to take her place if she ceases to work even for a day, frequently permits what she "guesses" might have been a "miscarriage" to pass without attention until its sequelæ force her to seek medical aid. It must be said that while this is a more necessitous condition among the very poor, the women in comfortable circumstances, who do not have the same reason for lack of intelligence nor the same compulsion in their surroundings, are not one whit more sensible of the dangers of abortion or more ready to seek aid for it when not compelled by alarming symptoms.

For these reasons, and others, many authorities account that a polyclinical record with careful questioning of the mothers is the only means of acquiring anything like an accurate knowledge of the proportion of abortions to the total number of births, and that even this must be constantly discounted by unintelligent and false testimony. Necessarily, therefore, statistics as published by hospitals and physicians vary enormously. The Paris Maternité, for instance, gives out a proportion of one abortion to every seven and nine-tenths births; the Russian maternités, one to every ten births; and Kyssner, one to every five and six-tenths. The last is a polyclinical record. Taussig,[1] who made a careful outpatient investigation, estimated as high as one abortion to every two and three-tenths births.

In the statistics previously given by Markoe,[2] of the staff of the New York Lying-In Hospital, the proportion of abortions was only one in every 23.61, with a mortality of less than 2 per cent.; but this was in a neighborhood where outside help would be sought if grave symptoms occurred.

The word "abortion" has been subjected to somewhat artificial subdivisions, such as abortions and miscarriage — the latter signifying later instances of the same abnormality; early and late abortions; abortions and premature labor; but for my particular purposes at present I shall not consider these subdivisions at all. All cases of interrupted pregnancy coming within the first twenty-eight weeks will be included under one general term whose definition is, according to Taussig, "the previable expulsion of the human ovum." After the twenty-eighth week "premature labor" is a properly substituted phrase for the interruption of pregnancy.

The actual occurrence of abortion is scientifically an "abnormality of the pregnant uterus," and is a variation of a normal physiologic action but occurring too soon. The etiology of fetal death is not to be confounded with that of abortion and must be studied separately, for while "it is the most frequent cause of abortion, it is the most difficult one to avoid." There are predisposing factors in the condition of the mother causing her to abort which may generally be summed up as: (1) increased sensitiveness to nerve stimulation; (2) a greater tendency to placental thrombosis; (3) a lessened resistance to expulsion. While these are all justly considered as explanatory of the condition, they are not primary reasons, and we need still to know what temperamental, accidental or pathologic causes underlie them.

Immediate excitants to ovum expulsion may be of four kinds: mechanical, thermal, toxic and nerve irritation, with fetal death as a fifth determinant. Fetal death may be the result of a number of reasons: congenital, nutritive, infectious or hyperpyretic, but its occurrence acts in reality as a mechanical irritation from within producing expulsive contractions, since the dead fetus is, as it were, "a foreign body" in the uterus.

Among these irritations producing ovum expulsion, the first and fourth only, with some indirect evidence as to the fifth, will be noticed in our analysis, since the thermic and toxic irritants are not tabulated to any extent.

Among mechanical irritations, such as falls, blows and strains, we had seventeen cases of falls, one of a blow on the abdomen, one injury from accident, and one woman had lifted a heavy weight. Psychic conditions causing abortion were cited in about four cases. The accidental causes of abortion, then, all told in this list, amounted to less than 1 per cent. of the whole. This,

* From the Service of the Lying-In Hospital of the City of New York

1. Taussig, Frederick J.: The Treatment and Prevention of Abortion.

2. Markoe, James W.: Observations and Statistics on 60,000 Labors.

therefore, is correctly accounted an insignificant cause by most authorities.

Uterine disease occasioning a greater tendency to placental thrombosis are among the frequent causes of abortion. These are naturally to be found among multiparæ more often than among primiparæ, and abortions among primiparæ are notably less in lists recorded by nearly all writers. Franz found less than 0.5 per cent. among his 844 patients to be primiparæ.

In our series there were 580 primiparæ, or 16.5 per cent.— approximately one primipara to every six aborting women. This becomes more exact when we divide the 3,500 cases into two groups with separate sets of factors. The first group was composed of 1,781 neighborhood cases, mainly made up of women in their own homes subject to the ordinary accidents of pregnancy; and the second was the hospital group, including many cases of criminal abortions, and almost all of the accidents and emergency cases. The percentage of primiparæ for the latter group alone was 25 per cent., leaving the low percentage of 8.9 for the first group.

We shall see that these two classes of cases fall apart in more ways than one during the process of analysis, but mainly in the mortality percentage. The division into two groups affects the ratio of primiparæ in proportion to the criminal abortions. Among these, primiparæ made up 35 per cent. of the hospital group and only 16 per cent. of the neighborhood group.

The next interesting set of figures deals with the relation of the abortion to the month of gestation in which it falls. In our series there were 1,320 cases between the sixth and twelfth week, 1,220 cases in the three months following this and 800 in the first six weeks of pregnancy. These figures are given in their relative importance of frequency. There were 140 unnoted cases, and some twenty cases of premature labor which do not properly come under our definition, "the non-viable expulsion of the human ovum."

Viability has not, as yet, been actually determined, but premature births to the limit of the twenty-fourth week have produced living children. Ahlfeld believes the assumption of the non-viability before the end of the twenty-eighth week altogether too arbitrary, and Budin and Tarnier of the Paris Maternité show a number of living children even at the twenty-fourth week. Budin claims 30 per cent with the use of incubators.

The manner of the expulsion of the ovum varies with the anatomic changes of pregnancy, which may be divided into three groups of unequal time limit but covering the first two-thirds of the pregnant period. The first period occupies the six weeks in which the ovum is implanted in the uterus, and the second group of six weeks is that of placental formation. Careful study of the marked increase of abortions within this latter period show that they are due to the nutritive changes of the fetus at this time; to circulatory disturbances in the uterus from the developing placenta and, finally, the fact that this is the time when the pressure symptoms from malposition of the uterus would be felt.

There is a fourth cause — syphilis — given by Thomas as a reason for the increased number of abortions in the second six weeks; but if it is true, as I believe, that syphilis is liable to occasion fetal death, then a later period of gestation would be more likely to be affected by this infection.

During this second period — that of the most frequent abortions — there is a firmer adherence of the chorion to the uterine mucosa, and with it a greater tendency to the retention of portions of the placenta after the ovum is expelled. When the membranes have been ruptured by instruments to induce abortion the entire placenta may be left adherent or the decidua may come away in shred-like discharges after the abortion.

It should always be borne in mind that the record of abortions for the first two months, even leaving out of account cases of criminal abortion, which certain authorities place at as high a figure as 50 per cent. of all that occur, are harder to keep than those happening later; and, therefore, it is not surprising to find the number of abortions in the first six weeks the smallest of the three periods under consideration.

In the first three months, 1,320 abortions occurred (60.5 per cent of the whole number), and the fetus was not found in 1,183 of these cases. This was often due, no doubt, to the fact that the physician was not called in until after the abortion had taken place, sometimes not until a long while after; but it gave additional reason for the needful curettage to avoid resulting conditions of sepsis and disease.

In the entire series the ovum was expelled broken up in 547 instances, and unruptured in 480 (13.7 per cent.).

Three stages, as for labor at term, may be detected in abortions occurring between the twelfth and twenty-fourth weeks; that of cervical dilatation may be extended over several weeks followed by rupture of the membranes and the expulsion of the fetus. While the placenta is more easily detached from the uterus in its later stages of development, it is expelled more slowly during premature deliveries than at term, because the uterine contractions are less powerful at the earlier period and the placenta, being somewhat larger than the fetus, may require greater dilatation of the cervix. The uterine mucosa will also be found more closely connected with the ovum when inflammatory processes are present.

The general analysis of the product in this series gives the following results: fetus found macerated in fifty-two cases; spontaneously delivered, 167 cases; manually extracted, eighty-six cases; instrumentally extracted, eighty-three cases; found and measured, 143 cases; multiple pregnancies and monstrosities, eight cases; not found, or unobserved, 2,961 cases. It is worthy of observation here that the 2,961 cases of unfound products of abortion make up nearly 85 per cent. of the whole number and point significantly to the fact that the uterus needs careful investigation after every case.

Abortions are also due to an infection producing inflammatory conditions or syphilitic changes, and finally to hydrops of connective tissue known as hydatid mole. In my series, there were three cases of hydatidiform mole, fourteen of tumors, cysts, etc. Syphilitic, tuberculous, nephritic or other cachectic symptoms are often accompanied by degeneration due to anemic infarcts producing albuminuria. There were thirty-five such cases noted in my list, beside other degenerative results.

Suppurative deciduitis may finally occasion sepsis, a pathologic condition following the expulsion of the ovum. It will be found in considering the mortality of the cases before us that sepsis of some kind is the most frequent cause of death.

The total mortality of the 3,500 cases was sixty-six, or 1.8 per cent. This is slightly less than the percentages of deaths from abortion given by careful authorities

elsewhere; 1.9 per cent is more usual. Continuing the interesting subdivision of cases into two groups as we have done previously, we shall observe that in the neighborhood subdivision there were only three deaths out of 1,781 cases, giving practically the negligible percentage of a little over .016 per cent. On the other hand, the percentage of deaths in 1,719 hospital cases was sixty-three, or 3.6 per cent.

The number of induced abortions in the whole series was seventy-four, or 2.11 per cent.; in the hospital alone, sixty-nine, or 4.07 per cent. In the hospital practice there were thirteen deaths from criminal abortion, or 6.3 per cent. of the mortality list.

The remaining fifty-three deaths were from the following causes: pneumonia, three; septicemia with other complications, twenty-three; toxemia of pregnancy, six; peritonitis with pyosalpinx and other complications, eight; pyemia, four; staphylococcus infection with general peritonitis, one; shock from hemorrhage, one; asphyxia from chloroform, one; unknown, three; ruptured uterus, one (this and placenta prævia were combinations in several of the above cases); albuminuria, one (this and nephritis were complications several times); ruptured tubes, ectopic gestation and hysterectomy combined, one.

TREATMENT

The two symptoms which are always present in an abortion are pain and hemorrhage. It is, nevertheless, necessary to obtain a more complete history of the case since other pelvic conditions cannot always be differentiated from abortions without careful diagnosis. A thorough vaginal and abdominal examination is, therefore, necessary since the abdominal examination alone often gives only the rather negative results of a general tenderness.

After the third or fourth month, an enlargement and softening of the uterus, with a partially dilated cervix, may be found on vaginal examination; if the symptoms have persisted for some time, the cervical canal may even permit the finger to enter, and in such cases there can be no room for doubt.

The character of the hemorrhage should be obtained, if possible. By the previous analysis it has been shown that in most instances of early abortion the fetus is lost and, therefore, it is difficult to determine without this evidence how much may be remaining within the uterus; if, however, the cervix is dilated, the bulging mass of membranes may usually be felt.

PROPHYLAXIS

If the cervix should be tightly closed and the patient not bleeding profusely, of course, every effort should be made to prevent the further stages of abortion. The patient should be put to bed, the rectum emptied, an opiate administered if necessary, and absolute quiet should be ordered. I prefer to use a combination of sulphonethylmenthanum and codein, given almost to the point of stupefaction, for quieting the patient. In private practice, especially, by this means many initial symptoms of abortion may be checked and the pregnancy continued normally.

It seems scarcely necessary to emphasize the fact that the surgical treatment of abortions should be as carefully aseptic as that for any surgical operation. When a careful examination has been made and the physician finds that the abortion is incomplete or inevitable, let him at once proceed to pack the uterus with iodoform gauze ¼ inch wide, after having placed the woman in the lithotomy position with the usual preliminaries of thorough scrubbing and shaving of the external genitals. The packing may be done with the aid of a bivalve speculum and a volselum forceps on the cervix, using a uterine-dressing forceps or a sponge forceps to introduce the gauze. "If a clot, or the fetus, or the placenta, is within the grasp of the cervix and ready to be expelled this is extracted with the sponge holder or with the finger"[3] (Kosmak, p. 34). The uterus and vagina should be packed as tightly as may be without using force, and the patient should be kept absolutely quiet for another twenty-four hours.

After the first twenty-four hours of packing, every patient should be prepared for a curettage since, no matter how complete the expulsion may have appeared to be, the curet will bring down bits of tissue, liable, if not removed, to adhere to the uterine wall. These adhering tissues often produce inflammatory conditions and further uterine troubles, such as endometritis, with attendant leukorrheas, and so forth. It is of the utmost importance that there should be no focal point left within the uterus for the growth of pyogenic organisms.

Complete anesthesia is desirable for the second stage of treatment in abortions. If the cervix is not sufficiently dilated, this is accomplished with a Goodell dilator, and the uterine interior is explored with a sponge forceps for the purpose of extracting any large masses of tissue within its grasp. Careful curetting with a large sharp curet is then performed until the uterine cavity is clean. It is not desirable to douche the interior of the uterus since the ostia of the tubes may be relaxed in the general muscular relaxation of the uterus, and the douche water may find its way into the peritoneal cavity through the fallopian tubes. Scrubbing out the uterus with a bit of gauze serves the double purpose of final cleansing and of stimulating contraction of the uterine muscles, so much so that the cervix may even demand a further application of the dilator before the packing is finished. The entire uterine cavity is then wiped out, first with dry gauze and then with tincture of iodin, and an iodoform gauze drain reaching to the fundus inserted. If obstinate hemorrhage persist, the uterus may be packed, although this is usually unnecessary.

This technic generally follows the course outlined by Kosmak, of our staff, in a recent article, and with a few minor changes is that universally used by all the surgeons of the hospital. Radical treatment in the above manner was given in 2,803 of our 3,500 cases. Of these so treated, there were only forty-four who were not left in good or fair condition, and thirty-eight who died; eighty-two in all (2.9 per cent.). Of these forty-four, twelve refused further examination and treatment; fifteen were sent for treatment elsewhere for such general causes as syphilis, phlebitis, pneumonia, puerperal mania, etc.; six had tuberculosis; nine left against advice; two had severe complications.

SUMMARY

In summing up the entire situation the following points are evident:

A. Abortions are more common than we realize, and the sequelæ are frequently serious.

B. After every prophylactic measure has been tried and the abortion which has threatened becomes inevitable, the following statements seem to have been proved by the foregoing analysis:

3. Kosmak, George W.: The Radical Treatment of Abortion.

1. Rarely, if ever, is an abortion complete. Only in 13.7 per cent. of the cases analyzed was there the slightest reason to believe that the ovum was expelled unbroken.

2. All abortions should be investigated and the uterine cavity explored.

3. When this is done according to the outlined method, we can show a mortality in all classes of cases of not more than 1.8 per cent. and in ordinary cases, exclusive of accidents and malignant complications, of not more than .016 per cent.

4. We can also show, which is perhaps most important of all, satisfactory results in 97 per cent of all cases so treated.

NOTE.—In addition to the authorities previously cited, the following may also be consulted:

Edgar, James Clifton: The Premature Interruption of Pregnancy, Medical Report New York Lying-In Hosp., 1897.
Harrar, James A.: The Results and Technic of the Lying-In Hospital Outdoor Service in 4,500 Confinements.
Medical Statistics of the Lying-In Hospital for 1893, 1909, 1911.
Lambert, Samuel, and Painter, H.: Fever in the Puerperal Woman.
Welch, J. E.: The Morbid Anatomy of the Toxemias of Pregnancy, Bull. Lying-In Hosp., vi, 72.
Gushee, Edward S.: Lacerations of the Cervix During Labor, Based on the Study of 1,000 Cases in Primiparæ, Bull. Lying-In Hosp., vi, 116.

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ABSTRACT OF DISCUSSION

DR. J. M. BALDY, Philadelphia: This whole question of the treatment of abortion is to be viewed from two standpoints. From the scientific standpoint I might be willing to grant that the paper is somewhat near the truth. The statement is made that all abortions under four months are incomplete. Those of us who have practiced in the slums, in well-appointed hospitals and otherwise, know that that is not a correct statement. The majority of these cases, unless brought on by criminal abortion—I mean coming on from inherent disease—are complete—perhaps not complete at the moment they are seen, but if handled properly they will be complete. I am talking largely to the body politic of the medical profession and not the experts. All women miscarry on an average of one in four, and abortion is therefore not an unusual thing. I would say not to use an instrument for abortion unless there was special indication for that interference. Ordinarily I would say that, unless a patient is septic, I would never interfere, but wait and see the result, whether there is an elevation of temperature or pulse or undue bleeding. Of course, the patients that come to us septic and with temperature and pulse elevated, are an entirely different class of cases than the ones I have been discussing. There we are dealing with a pathologic condition and not what might be called a physiologic one. The whole teaching of this eternal interference with abortion under any and all circumstances has done more harm to women and to the medical profession as a whole than almost anything else I know of in the way of teaching. What an advanced specialist can do with safety and what is best for the ordinary family doctor to do are two entirely different things.

DR. F. J. TAUSSIG, St. Louis:: I have had occasion to look into the literature of this subject rather extensively; Dr. McPherson's paper is the first thoroughly systematic review of cases from any large American institution. In regard to treatment, I do not believe that he meant to say that the form of treatment that was adopted at the lying-in hospital would be that which could be adopted by the profession at large, and yet, I feel that unless this is explicitly stated, the profession at large would be tempted to adopt such a method. I feel that particularly in obstetric matters, we are inclined to recommend, for cases that are usually treated by the general practitioner, methods of treatment that require special training and technic. I am thinking now more particularly of the treatment for eclampsia, for which some have recommended vaginal cesarean section, an operation that certainly could not be done by the average practitioner. As to the treatment of abortion, I believe that in the long run we would do better to follow Dr. Baldy's advice and teach the general practitioner to leave abortions alone, unless special complications ensue. I would differ with Dr. Baldy regarding the complications demanding interference. It seems to me that the cases in which there is a large portion of placental tissue retained are the ones that demand operative treatment. When, however, there is a septic condition I should hesitate very much to recommend operative interference by the practitioner.

DR. A. M. HAYDEN, Evansville, Ind.: The curet is the most dangerous instrument that can be put into the average practitioner's hands. I do not believe it should be used in abortion under any circumstances. Of course, if you have a pathologic condition, a portion of the placenta remaining in the uterus undergoing decomposition, it is well enough to clean out the uterus, but that can be done without using the curet. If a curet is used at all it should be a very dull one. If the portions of placenta are sufficiently large, I take them away with placental forceps. In the majority of such cases, if the uterus is packed aseptically as in a laparotomy with iodoform gauze, which is removed once in twenty-four hours for two or three days, the uterus will be made thoroughly clean and aseptic. This thing of meddling with abortions or interfering in such cases, unless there is special indication, I think does harm. The average patient will do better if let alone than if interfered with.

DR. HENRY SCHWARZ, St. Louis: I believe the sharp curet should not be used in recent cases of abortion. Dr. McPherson has particularly emphasized the fact that abortions are apt to lead to pathologic conditions of the uterus, which will create the habit of abortion, and in these cases I have been in the habit of using the sharp curet six or eight weeks after the miscarriage has taken place for the purpose of insuring a thorough involution of the uterus.

DR. ROSS MCPHERSON, New York: In regard to Dr. Baldy's statement that abortions are always complete and also in regard to his reference to the treatment practiced, I would say that 1,718 of our cases occurred in tenements, and that each case was taken care of by our staff, not by the more highly trained members. Every case was examined by the pathologic laboratory and, in every instance, detritus was removed which could not have been removed had the operation not been performed. If Dr. Baldy will recall the figures he will remember that the mortality was 0.016 per cent., which is a negligible death-rate. The cases occur in the worst districts of this country and the work is done by our interns under supervision, but the surrounding conditions are as bad as they can be. I do not believe that over 20 per cent. of any abortions are ever complete, and I still adhere to the theory that a great many of the endometritis conditions are due to untreated abortions. I cannot change my opinion on that. I would agree with Dr. Taussig that it would be better for the general practitioner not to do curettage, but the general practitioner, in New York at least, will do curettage, and therefore it is better that he be trained to do it properly rather than as he so often does it now, without an anesthetic and with no aseptic precautions. Therefore, I think it proper to bring forward such statements. The danger of the curet, of course, is a question that comes up annually for argument. The curet is dangerous, and so is a knife or a pair of scissors, but both are very efficacious if properly handled. I believe that gauze packing will bring away much of the extraneous matter, but I am certain that repeated packing is fully as dangerous from the standpoint of infection as is a proper curettage, if not more so.

Alcohol a Narcotic Poison.—Careful study of the effects of alcohol on vital resistance, the phagocytic power of leukocytes, heat production, digestion, the heart's action, blood-pressure, the kidneys, the liver, the brain and the nervous system has led scientific observers to the conclusion that alcohol is a narcotic poison to be classed with such drugs as chloroform, ether and chloral.—B. C. Keister, in paper read before the Medical Society of Virginia.

GYNECOLOGIC DISEASE IN THE INSANE

AND ITS RELATIONSHIP TO THE VARIOUS FORMS OF PSYCHOSES *

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The influence of gynecologic disease in the causation and prolongation of insanity among women in the past has been the subject of the most extravagant statements. Even yet we hear, usually from those with limited experience, that most of these women can be cured by operation. I am particularly struck with the lack of judgment displayed by some of the writers abroad. Professor Bossi of Milan, who devised the well-known uterine dilator, recently published an article on the relationship of suicide to gynecologic disease based on half a dozen observations and many hypotheses. Professor Schultze of Jena, a month later agreed with Bossi's assumption that a large percentage of psychoses in women could be cured by operation. He referred to the work of Hobbs of Canada, but seemed entirely ignorant of the important work of Manton of Detroit, and Leroy Broun of New York. It is primarily to Manton and Broun that we owe our present knowledge of this subject. Their work has extended over a long period of years and is characterized by carefully drawn, conservative conclusions. It was primarily concerned with the results of operative treatment and the character of psychosis most favorably influenced thereby.

A question of perhaps equal importance has as yet hardly been touched on; it is that of the percentage and exact character of gynecologic lesions found in insane women, and above all, the relationship of such lesions to the different forms of insanity.

EXAMINATIONS

As gynecologist to the St. Louis City Sanitarium I have examined personally, during the past year, 537 out of about 900 women inmates with a view to making a complete gynecologic diagnosis. The violent patients and those suffering from paresis were in great part omitted, but otherwise patients were taken in regular order without selection. The patients could usually be quieted easily; some here and there — approximately one in ten — would offer resistence. The attendants were instructed to watch the patients for a day or two after examination to note if the psychosis was in any way unfavorably influenced by the examination. Only in very rare instances was a temporarily increased excitability observed.

Patients examined in the observation ward of the St. Louis City Hospital before being transferred to the sanitarium were usually very difficult to manage and the gynecologic examination was most unsatisfactory. Even after they had been at the sanitarium for some time it was by no means easy to make a complete bimanual examination. For this reason I preferred to make all the examinations personally, while Dr. Keim and the nurse reassured and quieted the patient. By such means I was often enabled to obtain the necessary relaxation, when it seemed almost impossible to accomplish it otherwise. Let me say at this point, that the report of Dr. J. K. Mitchell of Philadelphia on postoperative and postanesthetic insanity convinced me that only in cases of emergency would an anesthetic for diagnostic purposes be justified; so far, I have not employed it. In several instances when the patient at first resisted, I was able later, as the psychosis improved, to obtain complete relaxation.

RESULTS OF EXAMINATIONS

As a result of these examinations, 252 of the 537 women were found to have some lesion in the pelvic organs sufficient either to cause symptoms or to be in a position to cause them sooner or later in their lives. Minor abnormalities such as are found in practically every woman (small cervical tears, tears of the perineal body only, slight discharge, movable retroversions of the first degree), I classified as normal. In about one-fifth of the women showing gynecologic disease more than one lesion was found. There were altogether 319 pathologic conditions in the 252 women (Table 1).

TABLE 1.—CLASSIFICATION OF GYNECOLOGIC DISEASES FOUND IN INSANE WOMEN; 319 PATHOLOGIC CONDITIONS IN 252 PATIENTS SO DISEASED

Retroverted uterus	87	Polyp of urethra	4
Anteflexion - retroversion of uterus	22	Urethritis	2
Atrophy of uterus	8	Vaginitis	4
Laceration of cervix	13	Endocervicitis	19
Relaxed pelvic floor	52	Endometritis	10
Markedly relaxed abdomen	4	Salpingitis	20
Prolapsed uterus	13	Tubo-ovarian mass	3
Prolapsed urethra	1	Parametritis	5
Prolapsed rectum	3	Condyloma acuminata	1
Fibroid uterus	20	Bartholinian cyst	1
Ovarian cyst	3	Pruritus vulvæ	1
Cystic ovary	2	Postoperative condition	13
Polyp of cervix	8		319

Arrest of development, 30.
Tears and relaxations, 86.
Tumors, 23.
Polyps, 12.
Inflammations, 63.

It is of particular interest to note the character of pelvic disorder prevalent among these insane women. Cervical lacerations were seen in only about 5 per cent. of the diseased women. Serious inflammatory trouble was only rarely found. Not a single case of malignant disease appeared in this number. Other tumors were of about average frequency. On the other hand, mild chronic inflammatory trouble was frequent; retroversions of the uterus were present in a large proportion, and, above all, relaxations of the pelvic floor and abdominal walls were very common. To what degree the prolonged institutional life of many of these patients, together with its attendant constipation, was responsible for this frequency of relaxation I could not say but the assumption that it was responsible seems justifiable. Polyps of the cervix or urethra were also frequent, out of all proportion to the average. Conditions indicative of an arrest of development of the genital tract were found in over 10 per cent. of the diseased women.

ANALYSIS

The percentage of women with gynecologic disorders, as shown in Table 2, is usually given as much higher than the 47 per cent. figured in the present report. It seems probable that gynecologic disease is only slightly more common in insane women than in the sane. The point of real interest is the distribution of these lesions among the different forms of insanity.

In three of the important groups — senile dementia, terminal dementia and paranoia — the percentage of women with pelvic trouble was only about one-third. In dementia præcox about one-half the women were diseased. About two-thirds of the imbeciles were to be so

* The work of the present report was done with the collaboration of Dr. J. P. Keim, Assistant Resident of the St. Louis City Sanitarium.

* Read in the Section on Obstetrics and Gynecology of the American Medical Association, at its Sixty-Third Annual Session, held at Atlantic City, June, 1912.

classed; and in the manic-depressive group the percentage of women with gynecologic lesions was as high as 74 per cent. The psychic diagnoses were carefully revised by the superintendent, Dr. Johns, to whom I wish here to express my thanks. Considering the large number of patients examined, it could hardly be mere chance that such a striking difference should appear between the women in the manic-depressive group and those in some of the other groups.

Analysis of these examinations according to the character of disease associated with the particular psychosis

TABLE 2.—PERCENTAGE OF PELVIC DISORDERS IN INSANE WOMEN

Physician Reporting	Number Examined	Diseased	Percentage Diseased
Manton	100	81	81
Lawrence	100	84	84
Hobbs	220	188	85
Claus	554	...	15
Daniilo	200	138	69
Hall	154	...	38

TABLE 3.—REPORT OF 537 GYNECOLOGIC EXAMINATIONS OF INSANE WOMEN CLASSIFIED ACCORDING TO PSYCHOSIS

Psychosis	Total	Gynecologic Disease	Normal	Percentage Diseased
Terminal dementia	82	30	52	36
Paresis	5	3	2	..
Senile dementia	106	30	76	28
Dementia præcox	92	47	45	51
Manic-depressive insanity	61	45	16	74
Imbecility	52	33	19	63
Paranoia	50	18	32	36
Melancholia	20	8	12	40
Toxic insanity	8	5	3	..
Hysterical insanity	4	3	1	..
Postapoplectic insanity	3	0	3	..
Epileptic insanity	18	6	12	33
Unclassified	36	24	12	..
Total	537	252	285	47

brought out several additional points. The terminal dements showing only 36 per cent. abnormal had a proportionately large number of postoperative cases. Among the senile dements I found the increased number of relaxations that might be expected in old women. The dementia præcox patients showed an unusually large number with arrest of development. That there is some co-relationship between the gynecologic lesion and the form of the psychosis seems more than probable. In the group of imbeciles arrest of development was also more frequent than normal. Of special significance, however, was the frequency of inflammatory trouble and its associated misplacements of the uterus in the manic-depressive group. Since the psychic diagnosis made by the hospital authorities was only recorded after all the gynecologic findings had been tabulated it came as a complete surprise that there should be such a definite relationship between certain psychoses and certain gynecologic disorders.

TREATMENT

Although these examinations showed that almost one-half of the insane patients had some pathologic condition of the genital tract, it by no means follows that all of them required treatment. It was not always an easy matter to determine whether a given condition was giving rise to symptoms, but in all doubtful cases the attendant was instructed to watch the patient closely for several weeks. As nearly as could be determined, 141 out of the 252 women required some form of gynecologic treatment. Forty-seven were put on conservative measures such as douches, tampons, pessaries, etc., and in the remainder the question of operative relief came up for decision. Before any patient was subjected to an operation, the following precautions were taken: (1) Consent was obtained from the relatives; (2) the patient was put in the best possible psychic condition; (3) the ailment must be clearly giving rise to symptoms of moderate severity or be in itself a danger to the individual.

Ninety-four patients in this series belonged to the possibly operative class, or 17 per cent. of the total number of patients examined. Probably not over two-thirds of this number will eventually require operation or submit to operative procedures. So far, only seventeen have been subjected to such treatment. One operation was an emergency one for double-sided suppurating ovarian cysts; the rest were undertaken only after the patient was in a favorable mental condition. Although the number of operations is as yet too small to justify any conclusions, it is interesting to see that all the patients showed physical improvement and some mental improvement as well, and that none showed any untoward effects either physically or mentally. Whenever possible, it was my aim, when doing a laparotomy, to keep a portion of the ovaries intact, and at the same time to resect a portion of the uterine end of the tubes. My opposition to double ovariotomy is based partly on the observations of such men as Manton, Raimann and Broun, partly on the history of the twenty-two postoperative psychoses in my own series. Over two-thirds of these women had had a double ovariotomy done on them; in some it had clearly been the exciting factor in the psychosis; in others it had made the condition worse; in none had it been beneficial.

My reason for resecting the tubes whenever the abdomen was opened for any other cause, provided always that the consent of the relatives was obtained, is based on several sad instances in which imbeciles and insane women became pregnant during lucid intervals while away from the institution and gave birth to imbecile or defective children.

In this connection, it is interesting that out of 313 women in this series of examinations 186 were married and 127 were single. In ninety married women tabulated for this purpose, there had been 216 children, an average of 2.4 child per mother. When we consider the dominant part played by heredity in the causation of insanity, the question naturally arises whether the state should allow such propagation of the insane to continue indefinitely. With the growth of eugenics as a science, this matter is bound soon to receive proper attention. I believe the time will come very soon when the sterilization of the insane will be considered necessary for the progress of the human race.

TABLE 4.—TABULATION OF AGE OF 107 INSANE WOMEN AT ONSET OF PSYCHOSIS

No.	Age	Per Cent.	No.	Age	Per Cent.	No.	Age	Per Cent.
4	*	..	34	30-40	..	11	12-18†	10
14	20	..	11	40-50	..	11	42-52‡	10
33	20-30	..	9	50-60	..	..	20-40	60

* Congenital. † Puberty. ‡Menopause.

A brief additional study was made of the relationship of the age of the patient to the onset of her psychosis.

Table 4 shows that out of 107 women, about 10 per cent. developed their psychosis at the time of puberty, 10 per cent. at the time of the menopause and over 60 per cent. between the ages of 20 and 40. Only here and there was the psychosis aggravated during menstruation or the direct result of a foregoing pregnancy.

OPERATION IN MANIC-DEPRESSIVE INSANITY

Let us return for a minute to the question of operative treatment for these insane women. In Table 5 is a

TABLE 5.—OPERATIONS AND RESULTS ON MENTAL CONDITIONS

Operator	Number	Mortality Per Cent.	Recovered Per Cent.	Improved Per Cent.	Unchanged Per Cent.	Worse Per Cent.
Hobbs....	173	2	42	24	32	0
Mayo....	60	0	..	16	..	0
Angelucci	109	..	..	..	..	21
Henry...	28	3	..	57	40	0
Rohe.....	34	0	41	15	44	0
Broun...	242	2	18	..	..	0
Taussig..	17	0	17	17	66	0

summary of some of the operative work done so far. While the percentage of mental recoveries is not very great in the more careful statistics of such men as Broun, there can be no doubt that the operative measures are absolutely justified merely by the bodily welfare of the patients. The most important fact brought out by Leroy Broun's last report is the fact that a large percentage of the women who recovered their normal mental condition were of the manic-depressive group. The exact numbers as stated by Broun are fifty-one out of seventy-two, or about 70 per cent.

We have therefore three facts pointing to some sort of relationship between gynecologic disease and manic-depressive insanity. They are:

1. The decidedly greater frequency of gynecologic disease in this form of insanity—74 per cent. as compared with average of 47 per cent.

2. The large proportion of chronic inflammatory conditions of the genital tract in this form of insanity.

3. The proportionately large percentage of mental recoveries after gynecologic operations done on women having this form of insanity.

I conclude, therefore, that in manic-depressive insanity every patient should be subjected to a gynecologic examination and that when a definite lesion is found this should be corrected either by local or operative measures.

ABSTRACT OF DISCUSSION

DR. T. M. T. MCKENNAN, Pittsburgh: In the psychopathic department of the hospital we have about 100 women all the time, and it would seem desirable—in fact, a duty—on the entrance of a woman patient to have every form of examination gone through with. The plan of procedure that we adopt is about as follows: The history is taken in the receiving-ward and then all the physical examinations are gone into by competent men—the internist and the psychiatrist—and then the various laboratory tests are made. In a very small percentage of cases it is possible to have a gynecologic examination made. In the acute cases it is rare to have such examination unless the patient is subjected to anesthesia, and as Dr. Taussig has said, it is advisable to do this but rarely. We have really formed no definite conclusions, although this matter has been going on for several years. The dementia præcox patients do not show a large number of disturbances except in the matter of undeveloped uteri. This is in harmony with the other anatomic stigmata in these cases. The general hospitals for the insane in many of the states have gynecologists associated with them. In Pennsylvania all of the state hospitals have a woman resident physician who is supposed to do this work. Unfortunately, I believe that in most institutions this work is rather neglected, and it comes down to the question of these chronic cases, many of them cases of dementia præcox, and the senile type in which it is thought hardly worth while to examine unless actual attention is called to the case.

Our gynecologist, Dr. Huggins, has operated in quite a number of chronic cases. I am not competent to speak on the matter except from the psychic standpoint. So far as our observation goes, operation is borne badly and the postoperative care is very difficult, especially if they show maniacal tendencies. The subject is one to be approached from the scientific standpoint. Institutions should have a competent gynecologist associated with the work. It is difficult to avoid wrong conclusions. Recovery in an individual, especially in this class of cases, does not indicate that the means used have been actually productive of recovery. This is especially true of the manic depressives, among whom the ordinary recovery rate is from 60 to 85 per cent.

DR. C. O. KEPLER, Boston: About a year ago I had a paper published in the *American Journal of Obstetrics and Gynecology* on the subject of complete procidentia in the nulliparous woman, with special reference to physical degeneration. I was surprised to find how many cases there were of congenital stigmata associated with mental perversions. I found that the physical stigmata that were not gynecologic included harelip, cleft palate, spina bifida and various stigmata of that sort; also umbilical hernia and obstetric stigmata. I also found cases of congenital absence of perineum, atresia and absence of the vagina and the uterus and its appendages; also in quite a large number of cases complete absence of the pelvic floor and many cases of relaxation. In another case that was not congenital there was femoral hernia, associated with procidentia. This is a true hernia in Douglas' pouch. Of the complete procidentia in the nulliparous woman I was able to collect in the literature reports of seventy cases. Through the kindness of gynecologists and alienists in this country and Europe, I was able to collect about eighty more cases of complete procidentia associated with all forms of mental perversion from a low-grade mentality to complete imbecility, even cretinism and idiocy and from hysteria to all forms of mania.

DR. M. A. COHN, Brooklyn: Only last week I saw a case of nymphomania in my office. The woman was bordering on insanity, and I am almost sure that sooner or later she will land in an insane hospital.

DR. WALTER P. MANTON, Detroit: From my experience I doubt whether pelvic disorders ever cause insanity. There is no doubt whatever, however, that pelvic conditions—foci acting as points of irritation—do keep up the insane condition and add more or less to its severity. I can also say that I have never yet seen an insane patient cured by surgery *per se*. We have had many cases of so-called cures, and there is no doubt that surgical procedures in their proper place do act as factors in helping to restore the disordered mind, but I doubt very much whether surgical operations alone on the insane have a curative effect. The statistics of Dr. Taussig as to the frequency of pelvic disorders among the insane correspond very closely with mine, about 50 per cent. in unselected cases. Some years ago in a series of unselected cases at the Pontiac State Hospital I found the frequency to be about as stated.

An anesthetic is absolutely necessary in the successful examination of certain patients. I have not yet seen any evil effects from the anesthetic used either for examination or operation. Some years ago I looked into the question of the legality of operations on the insane and found that such operations were not permissible unless the consent of the friends of the patient was obtained, or in the absence of friends, in the instance of state charges, of the superintendent. Relative to the large number of cases of manic depressive insanity and dementia præcox in which pelvic disorders were found, I think that dementia præcox occurs, roughly speaking, in something like 10 per cent. and manic-depressive insanity in perhaps the largest proportion of all cases of insanity in institutions. This being so, naturally we should expect to find the largest number of pelvic and abdominal conditions in the insane associated with these two mental disorders.

DR. GUY L. HUNNER, Baltimore: I have a patient in the hospital who brings out very strongly the importance of knowing about what we ought to expect from operating on patients of this class. A very prominent woman of Washington consulted me about two months ago, saying that her family physician, whom I know to be a very good man, had told her that she must be operated on for her relaxed outlet and partial descensus of the uterus. She is 36 years of age, has three children, and has had increasing trouble after her menstrual epoch in reference to mental disturbances, almost suicidal. Were it not for her children she feels that she would take her life. The family history is very bad, which seems to me to have more to do with her condition than the relaxed outlet and partial descensus which would be seen in almost any woman who had had three children. To test the question of whether a supportive operation would help her, I had her wear a pessary for six weeks or two months, but it seemed to do absolutely no good. I operated on her the day I came down here, because she had the idea firmly fixed in her mind that she was not going to get well until operation was done, and because she had some little trouble in the pelvis. I had urged that she wear the pessary for the summer, but she did not agree to this. It is only by having many statistics, such as Dr. Taussig has, that we shall be able to draw very definite conclusions concerning the value of operating on patients suffering from this sort of trouble. The cases that perplex me most are those of so-called epilepsy—menstrual epilepsy. In almost every case the family and family physician are convinced that the attacks occur at or near the menstrual period. Practically, they occur at almost any time. I have operated on four or five patients, explaining thoroughly beforehand that I had no faith in the results, and have had but one good result in removing the ovaries. That case was the only one in which the epilepsy did occur at the time of the menstrual period. The patient is well and is most grateful for the outcome. I should think that twelve cases of polypi, eight of the cervix and four of the urethra, in 500 cases, not a very high percentage. It seems to me that about 1 per cent. of all office patients have urethral polypi and eight out of 500 have cervical polypi. The urethral caruncle is almost one of the most painful conditions a woman can have. In regard to the inflammatory conditions in these maniacal depressive cases, I wonder if it is not just the class of patients who have had abortions performed and have done such things during pregnancy that would bring on inflammatory disease, and whether the gynecologic condition was not subsequent to the mental rather than the other way about.

DR. F. J. TAUSSIG, St. Louis: In nymphomania and epilepsy it seems to me we may have gynecologic symptoms, but not gynecologic disease, as a rule. Six out of eighteen epileptic insanities in my series showed only slight gynecologic abnormality, and while I have not tabulated the nymphomania cases I recall three or four cases in which there was absolutely nothing wrong with the genital organs. Particularly in nymphomania we must consider the eroticism as a part of the mental condition and not ascribe these symptoms to gynecologic lesions. Dr. Manton stated that gynecologic disease does not directly cause insanity. I am quite in accord with that view, but it seems to me that we must consider the fact that in women gynecologic disease is the most frequent form of irritant, acting as a factor in the production of insanity. If we can correct that irritant, we may perhaps prevent a recurrence of the insanity. The patient may not be assisted in getting over her manic-depressive condition by the gynecologic treatment or operation, but at any rate she is not so liable to recurrence after the removal of the gynecologic irritant. When a laparotomy is indicated for other reasons, I think we are justified in doing a simple sterilizing operation on the tubes in a woman who is insane. Knowing the tremendous factor of heredity in the causation of insanity, we are merely doing our duty if we prevent more insane being born into the world. Several instances in which imbeciles were allowed to leave institutions and had children, who in turn were imbeciles, have particularly led me to this conclusion. The operation of sterilization of the tubes is such a simple one that I believe it has practically no mortality when done in conjunction with other operative work.

THE EPIDEMIC OF SORE THROAT IN CHICAGO

A PRELIMINARY REPORT

P. G. HEINEMANN
CHICAGO

During the past winter there was an extensive epidemic of sore throat in Chicago, the main features of which have been fully described by Capps and Miller.[1] It is, therefore, needless to repeat in detail the data published by these authors.

Capps and Miller investigated conditions in eight hospitals, two of which were using milk from a certain dairy, designated Dairy X. In two of these hospitals the morbidity among the nurses was respectively 48 per cent. (H) and 53 per cent. (M. R.). The other six hospitals were not using milk from Dairy X and had a morbidity of less than 10 per cent. A canvass of 584 households was made by Capps and Miller with assistance from the Department of Health of the City of Chicago. Of this number 153 were attacked; 51 per cent. of households using milk from Dairy X were affected, while 7.2 per cent. of households using other milk-supplies were affected. Employees of the health department investigated conditions in B, where one of the pasteurizing plants of Dairy X is located. They also visited a large number of farms contributing milk to Dairy X, with the object of finding whether or not cases of sore throat existed among the milkers and their families or cases of mastitis among the cattle.

I have made no attempt to duplicate the data reported by Capps and Miller, but have made some inquiries in other directions, covering the following points:

1. The sources of supplies of Dairy X, the distribution of their milk in Chicago and the efficiency of the pasteurizing machines.
2. The conditions in all hospitals and public institutions using milk from Dairy X.
3. The conditions in certain households using milk from Dairy X.

I. THE SOURCES OF SUPPLIES OF DAIRY X, THE DISTRIBUTION OF THEIR MILK IN CHICAGO AND THE EFFICIENCY OF THE PASTEURIZING MACHINES

Dairy X obtains supplies from two localities, which may be designated as G and B. At G the milk is obtained from 122 farmers. The milk is pasteurized by the continuous process at a temperature of 162 F. The time of exposure of the milk to this temperature is less than one minute. No milk is bottled at this plant. One hundred to 200 cans are shipped to Chicago daily, according to the demand. The balance of the milk is made into butter and cottage cheese. There are six employees at this plant, all of whom were in good health and had not suffered from sore throat during the winter. Physicians controlling the bulk of the practice among the farmers contributing to this dairy stated that they had not seen a single case of sore throat among the farmers.

At B the milk is obtained from eighty-eight farmers and from a dairy located a few miles from B. All bottled milk and cream sold in Chicago by Dairy X is obtained from the pasteurizing plant located at B. The milk is pasteurized by the continuous process at 160 F. The temperature of the milk in the pasteurizer is recorded automatically in red ink on a chart. On exam-

1. THE JOURNAL A. M. A., June 15, 1912, p. 1848.

ining the temperature records for December and January, it was noticed that there were numerous deviations from 160 F.

Inquiry as to the cause of these deviations brought out the fact that the steam is shut off whenever the process has to be interrupted. The bottle-washing machine used up to Jan. 1, 1912, was not working well and it happened that the pasteurizing machine had to be shut off temporarily whenever there were not bottles enough to work with. A new machine has been substituted for the old one so that the supply of clean bottles was adequate after January 1.

It happens also that the producers do not arrive in time with their supplies so that the pasteurizer is stopped sometimes for this reason. Whenever steam is shut off, the outflow pipe from the pasteurizer is closed, so that no milk which has not been heated to the required temperature can leave. The records on the charts, therefore, do not necessarily indicate that milk at any time had not been heated to 160 F.

The bacterial efficiency of the process is apparently good. Counts made by the department of health and by the dairy's own chemist show that the pasteurized milk in bottles at the plant did not contain more than 25,000 bacteria, and not more than 50,000 in Chicago.

II. THE CONDITIONS IN HOSPITALS AND PUBLIC INSTITUTIONS

I have made inquiries at four hospitals using milk from Dairy X, not including hospitals M. R. and H., which were investigated by Capps and Miller. In these four hospitals the morbidity among nurses and other employees was: A., 9 per cent; N. C., 29 per cent.; W., 26 per cent., and C., no cases. Hospitals N. C. and C. obtain milk from Dairy X in bottles only. Hospitals A., W., M. R. and H. obtain milk from Dairy X in cans only. Cases of septic sore throat did not occur in Hospital A, while in N. C., and W. about one-third of the cases were septic. In four public institutions with more than 650 inmates, all of which were using milk from Dairy X, a number of cases of ordinary sore throat occurred during the winter months. The cases of septic sore throat were about 2 per cent.

Hospitals M. R., H. A. and W. and the four public institutions receive milk in cans only. The sealed cans are delivered by three drivers, who place the cans in the hospitals and break the seals. The dipping of the milk out of the cans in the hospitals is done by employees of the hospitals. Inquiries among the drivers showed that they had not suffered from sore throat during the winter and, so far as could be learned, had not been in contact with persons suffering from sore throat, either in their families or among their friends. Since only two out of six hospitals, using milk from Dairy X, had an unusual amount of sore throat among the employees, it seems reasonable to assume that infection of the milk, so far as milk was responsible, took place after delivery at the hospitals.

The source of the milk delivered in cans to hospitals and public institutions has some bearing on this assumption. Hospitals A. and H. obtained cans from G only during the winter months. The other hospitals obtained milk from G from Dec. 2 to 8, 1911, December 10 to 15, Dec. 17, 1911, to Jan. 6, 1912, January 8 to 16, January 18 to 19, and January 21 to 26. During the period of the heighth of the epidemic, namely from Dec. 25 to 31, 1911, all hospitals and public institutions obtained milk from G only, and no source of infection of this milk has been detected.

III. CONDITIONS IN HOUSEHOLDS USING MILK FROM DAIRY X

All bottled milk sold by Dairy X in Chicago is obtained from the pasteurizing plant at B. Three carloads are shipped daily. Two of these carloads are distributed on the north and south sides of Chicago. The third carload is distributed in a suburb near the northern limits of the city, which will be designated R.

Since Capps and Miller's investigations covered only the first two carloads, it was thought expedient to investigate also conditions in R. I visited a large number of physicians practicing in this locality, who gave me the names and addresses of patients, with dates and histories. I gathered in all records of 105 cases in seventy-eight households. After this list was secured the milk-supplies of the households were ascertained, thus eliminating the personal equation; 29 per cent. of the households were found to be users of milk from Dairy X. Since this dairy supplies at least one-third of the milk consumed in R, it is clear that users of this milk were not affected to a higher degree than users of other supplies.

The result of my investigation in R is thus in some respects different from the results obtained in other localities by Capps and Miller. The cause of the epidemic, therefore, may be attributed to a partial infection of the milk-supply rather than to infection of the whole. This condition is possible when infection takes place after pasteurization. In my judgment, infection from mastitis streptococci is not probable. It has not been definitely shown that mastitis streptococci are infectious for man. On the contrary, many observers consider mastitis streptococci avirulent for man. Early work on this subject is contradictory. Exhaustive recent publications[2] have shown that mastitis streptococci are probably not virulent for man and that their infectiousness has been exaggerated by earlier workers. If streptococci from milkers should have gained access to the milk, there is every chance of their having been destroyed by pasteurization, as it has been shown that the milk of Dairy X has apparently been uniformly pasteurized.

Infection of bottles after pasteurization by a germ-carrier is conceivable. There was, during the winter, an epidemic of sore throat of unusual severity in B. Among the twenty-five employees of Dairy X, five suffered. Among these five there was one case of septic sore throat. The patient handled the bottles previous to passing them on to the filling machine. He worked at the dairy from December 18 to 23, while suffering from swelling of the cervical glands. He was operated on in a Chicago hospital for drainage of the cervical glands. The man, by coughing or by contact, may have infected some of the bottles.

CONCLUSIONS

1. An epidemic of sore throat was prevalent in Chicago during the winter of 1911-1912, the primary cause of which remains undetermined.

2. Of six hospitals using milk from Dairy X, two had many cases of septic sore throat, the other four did not.

3. In four public institutions using milk from Dairy X, ordinary sore throat was common, but septic cases were relatively rare.

4. The hospitals and public institutions received milk in cans and no infection of the milk could be traced.

2. Schulze: München. med. Wchnschr., 1907, p. 1167. Puppel: Ztschr. f. Hyg., 1912, lxx, 449. Gminder: Centralbl. f. Bakteriol., Abt. I, 1912, lxiii, 152.

5. Households using milk from Dairy X in some districts of Chicago suffered severely. Households using milk from Dairy X in other districts did not suffer out of propertion.

6. Since the apparent infectiousness of bottled milk from Dairy X was intermittent, the solution must be looked for in partial infection of the bottles.

7. The bottle-supply of Dairy X may have been partially infected by an employee suffering from sore throat.

5756 Monroe Avenue.

FAMILY HEMATOPORPHYRINURIA AND ITS ASSOCIATION WITH CHRONIC GASTRO-DUODENAL DILATATION, PECULIAR FITS AND ACUTE POLYNEURITIS

A PRELIMINARY REPORT *

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BALTIMORE
AND
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SOUTH BETHLEHEM, PA.

We desire to give in this paper an epitome of a report in preparation on a peculiar syndrome which we have recently had the opportunity of studying.

Patient.—In the spring of 1910, a patient, an unmarried woman of 18, was referred to one of us for study by Dr. Ira J. McCurdy, of Frederick. Dr. McCurdy reported that for more than a year the patient had been passing urine of a very dark color, that she had been losing weight without apparent cause, and that during the illness she had suffered from recurring attacks of nausea and vomiting with some pain in the lower abdomen on the right side. She had also complained of some vertigo, severe enough to cause her to fall on several occasions, but never associated with loss of consciousness.

Family History.—The family history is of great interest. One sister, aged 18, died four years ago after an illness of nine months; her symptoms were very similar to those of the patient studied by us. Another sister, aged 22, is now suffering in the same way—is passing urine of port-wine color, has gastro-intestinal disturbances and has had pain in the right iliac fossa. The patient's mother and her maternal grandmother suffered from recurring attacks of nausea and vomiting with constipation and epigastric pain. The urine is said to have changed color during the attacks in the grandmother's case but the mother had never noticed any peculiarity in her urine. The father has an enlarged thyroid, distinct exophthalmos and positive Stellwag, Dalrymple and von Graefe signs.

Examination.—The patient was admitted to Ward G of the Johns Hopkins Hospital in April, 1910, for thorough study. The findings, on admission, in brief, were: A fairly nourished girl, not especially anemic. Osseous system rather underdeveloped. Hands clammy, skin otherwise dry. Tonsils hypertrophic. Thickened thyroid isthmus. No exophthalmos. Eye-grounds hyperemic; otherwise negative. Slight general enlargement of lymph-nodes. Thymus dulness positive. Slight general bronchitis; lungs (otherwise) and heart negative. Blood-pressure 90 (later this rose to 150). Abdomen held rather tense; tenderness in cecal region. Spleen and liver of normal size. No tremor. Sensation and reflexes normal. Temperature and pulse-rate not elevated. Wassermann negative. Calmette's tuberculin test negative. Pelvic examination negative except for backward displacement of uterus. Stomach juice after test breakfast: 40 c.c.; much mucus; free hydrochloric acid, 16; total acidity, 40; no blood or lactic acid present. Examination of blood: red blood-cells, 4,188,000; white blood-cells, 6,400; hemoglobin, 80 per cent. Differential count practically normal. Coagulation time, six minutes. Feces normal. Bile present. Test for occult blood negative. No parasites. The urine was free from albumin and sugar, but was often of port-wine color and contained large quantities of hematoporphyrin (spectroscopic demonstration).

Course.—A few days after admission the patient began to have slight fever (temperature from 99.8 to 100 F.), marked tachycardia (pulse-rate 104 to 140), a leukocytosis of over 20,000, and slightly accelerated respiration. She became restless and irritable and complained of weakness, total lack of appetite, pain in the precordial region, and numbness and tingling in the extremities. The thyroid became larger and was tender; Dalrymple's sign and von Graefe's sign appeared. No bruit or thrill over thyroid. May 10 she had a convulsion, which lasted about two minutes, during which she became cyanosed and bit her tongue. She had altogether nine convulsive seizures on that day. At the beginning of each fit the eyes deviated to the right or to the left, after which the eyes were rolled up; there were nystagmus, cyanosis and general clonic twitchings throughout the body. The twitchings were usually bilateral, but occasionally only one-half of the body was involved. The patient was delirious, and urine was voided in the bed repeatedly during the day. The fingers were kept clenched with the thumbs turned in. Trousseau and Chvostek tests were negative. During these attacks there was no hematoporphyrin in the urine; acetone was present; test for diacetic acid was negative. Temperature ranged from 99 to 101.8 F.; pulse-rate from 120 to 156; respirations from twenty-two to thirty-eight. The symptoms suggested strongly an acute intoxication of some sort and acute thyreopathy and parathyreopathy were considered. The fits soon ceased, the patient again became rational, the pulse-rate fell (112 to 136), the eyes grew less prominent, the thyroid gland decreased in size, the leukocytes fell to 8,840. The patient complained bitterly of abdominal pain and of pains "all over" the body, including the arms and legs.

May 18 she had another series of fits, this time beginning with clonic spasms in the orbicularis oris muscle, soon succeeded by tonic spasm of the bodily musculature (opisthotonos); the fists were clenched, but neither hands nor feet assumed the typical position of tetany, and Chvostek's and Trousseau's signs could not be elicited. The patient was again irrational between the fits, and unconscious during them. Pulse-rate was 136. Deep reflexes were rather sluggish, though they could be elicited. Thyroid was again swollen. Leukocyte count was 8,800. There was fruity odor to breath, but neither acetone nor diacetic acid was demonstrable in the urine. A solution of calcium chlorid was given intravenously.

After this series of fits passed off, the patient again complained of general pains throughout the body; those about the ankles were especially severe. There was slight pitting on pressure about the malleoli, but no redness. Leukocyte count, 10,400.

Operation.—May 26 she had a few more fits. The pains persisted, and the skin of the lower extremities became hyperesthetic. During the next few days the pain increased in the right lower abdomen and, at times, a small mass was palpable there. Exploratory laparotomy was deemed advisable and she was operated on by Dr. Churchman, May 31, who found dilatation of the pylorus and of the duodenum as far as the position of the superior mesenteric vessels, marked enteroptosis and pale flabby intestines. The abdomen was otherwise negative.

Subsequent Course.—The patient made a good recovery from the operation. After it, the pains in the ankles, knees and abdomen persisted. The patient continued depressed and irritable. Heart's action and respiration continued acceler-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

* From the Medical Clinic of the Johns Hopkins Hospital and University.

ated. Later the pains in the legs and arms grew more severe, the deep reflexes became exaggerated and the small muscles of the hands began to show signs of atrophy. Patches of cutaneous hypesthesia and of a hyperesthesia were demonstrable over the body. The hematoporphyrinuria continued.

By June 30 well-marked bilateral wrist-drop and foot-drop had developed, with extensive atrophy of the muscles in the upper and lower extremities. July 14, the patellar and triceps reflexes could no longer be elicited, and there was marked plantar hyperesthesia. Obviously, the puzzling pains of the earlier periods had been due to the onset of an acute polyneuritis. The patient returned to Frederick, Md., July 15. We were kept informed of the subsequent course by Dr. McCurdy. The patient grew weaker, the paralysis increased, and she died Oct. 10, 1910.

Necropsy.—Dr. Sladen and Dr. Sprunt kindly went to Frederick and performed an autopsy. The anatomic findings, excerpted from Dr. Sprunt's notes include: "Dilatation of the stomach and duodenum, hemorrhagic erosions of the stomach; pigmentation of the kidneys; slight chronic diffuse renal disease; anemia; fatty degeneration of liver, kidneys, heart-muscle and pancreas; hyperplasia of bone-marrow; acute bronchitis and bronchopneumonia; pleural and peritoneal adhesions; scar of laparotomy wound; retroflexed uterus; slight colloid goiter; extreme emaciation (neuritis?); calcified nodule in right lung."

The note on the condition of the stomach and duodenum is of special interest. It reads as follows:

"Just below the xiphoid cartilage, the upper portion of the abdominal cavity is taken up by the greatly distended stomach and duodenum. The lower border of the stomach reaches a point about two fingers' breadth above the umbilicus. The first inch of the duodenum is in close approximation with the wall of the gall-bladder. At this point it turns sharply backward toward the posterior abdominal wall, curving round underneath the pyloric portion of the stomach, appearing again below the stomach to the right of the midline, and curving round in its subperitoneal portion to end abruptly where it passes beneath the mesenteric artery. Just beyond the mesenteric attachment the jejunum appears normal in size. The contrast between the size of the dilated duodenum and of the normal jejunum is striking. There is no mechanical obstruction demonstrable. The space through which the duodenum passed beneath the mesenteric artery at the base of the mesentery seems as large and as roomy as normal. . . . The small intestine otherwise is contracted and seems empty. The large intestine, also, is small."

The whole autopsy report, including the description of the gastro-intestinal mucosa and the histologic findings in the viscera, will be published in our completed paper, later on. In our full paper, too, the literature of hematoporphyrinuria will be extensively discussed. It will suffice for the present occasion to state that since the condition was first observed by McMunn in 1880, it has been seen in various circumstances. Small quantities, insufficient to change the appearance of the urine, occur in a variety of conditions, apparently even in normal persons. Outspoken hematoporphyrinuria, with port-wine colored or reddish-brown urine, has been observed most often in poisoning by sulphonal or allied substances (e. g., trional and tetronal); it has occurred also in poisoning from lead, glycerin and saffron. It has been encountered occasionally in the course of certain chronic infections (especially tuberculosis and lues), in hemorrhagic complications of certain diseases (hematemesis of gastric ulcer; intramuscular hemorrhage in typhoid fever; cerebral hemorrhage in atherosclerosis), in certain skin diseases (hydroa estivalis, leprosy) and in exophthalmic goiter. There are on record, too, some instances of paroxysmal hematoporphyrinuria.

In connection with our cases, however, the most interesting reports in the literature are those commenting on the association of hematoporphyrinuria with gastro-intestinal disturbances (Ranke and Pardington, 1890; Schulte, 1895; Munro, 1908; Brown and Williams, 1909). There are seven such cases recorded; in at least three of them, a multiple neuritis developed, as in our case; in one of them, epileptiform seizures occurred. Two of the patients died, but no autopsies are reported. No one mentions gastroduodenal dilatation, but we feel sure, from the similarity of the symptoms to those presented by our patient, that it must have been present. We are inclined to regard the chronic gastroduodenal dilatation with (relative) chronic obstruction (functional stenosis) at the level of the mesenteric vessels as the primary condition; to view the hematoporphyrinuria and general toxemia with polyneuritis as in some way secondary to this, the symptoms probably coming out at times, owing to functional stenosis or relative obstruction leading to toxemia. The surgeons (Maury) and the pathologists (Whipple) have been calling our attention to the lethal toxemias which accompany obstruction high up in the gastro-intestinal tube. The whole subject of gastroduodenal dilatation and its relation to so-called chronic gastromesenteric ileus on the one hand and to acute postoperative dilatation of the stomach on the other is worthy of special study. The operation of duodenojejunostomy, first suggested by one of us and, subsequently, independently by Bloodgood, for the relief of the condition, has already been performed successfully by Staveley of Washington and should have an extended trial.

Though hematoporphyrinuria has been reported in connection with exophthalmic goiter, and though our patient showed signs of an acute thyreopathy superimposed on a slight colloid goiter during the course of her disease, we are inclined to regard the toxemia of gastroduodenal origin as the essential feature and the thyreopathy as an accompaniment.

We would emphasize, in our case, the family character of the disease. Besides the autopsy on our patient, Dr. Hunner has kindly given us the notes made by himself and Dr. W. G. MacCallum at the autopsy on her sister; in her, too, the stomach and duodenum were dilated. A third sister is now ill with the same syndrome. Perhaps some vice of development affecting all three accounts for the gastroduodenal dilatation which leads to the intoxication and the hematoporphyrinuria. The laboratory staff is now approaching the matter from the experimental side in the medical clinic.

We desire to thank Miss Nellie M. Casey, the district nurse at Frederick, for help, especially concerning the family history.

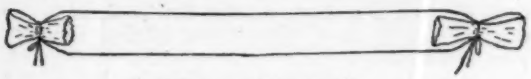
AUTO AND BICYCLE INNER TUBES USED AS ICE-BAGS AND HOT-WATER BOTTLES

J. H. SCHRUP, M.D., DUBUQUE, IOWA

One often meets conditions indicating a hot-water bottle or ice-bag, only to find them lacking. If the patient be too poor or the source of supply too distant or the time inopportune, it most frequently occurs that some makeshift is resorted to. If either a hot-water bag or an ice-cap is finally secured the chances are that it is unsatisfactory in some respect; that is, it is either too cumbersome, too heavy, too difficult of proper application or most frequently, leaky. Thus, as we all experience, our most efficient local treatment is either carried out with great difficulty or inconvenience, or the measure does not accomplish its purpose.

These conditions suggest the need of some substitute for use under adverse circumstances.

Bicycles have been in use for a score or more of years and are now so numerous that one of them, or at least the remnants of one, and most often the very part required for this purpose is readily at hand. Automobiles also have



Emergency hot-water bag.

the worn-out or blown-out inner tubes, certain sections of which answer the purpose very nicely. One might also conceive conditions in which accidents due to the same conveyances would require either cold or heat, when the ready containers would be in immediate command.

The method employed is to cut out a good section of the tube, as long as required, and tie the doubled-over ends. If there is a choice in the size of the tubes available for the indicated purpose, so much the greater luxury. A small-caliber tube, however, can be made to cover a large surface by using it as a coil. The comparatively wide-caliber opening affords easy filling, which is advantageous for ice—a marked advantage over the hot-water bottle. An additional point of practicability is to have enough of the tubing so that it will be possible to cut off or tie out any subsequent leak. Any surplus length may also serve as anchorage or for the purpose of additional linear application.

1120 Main Street.

Therapeutics

THE CARE OF INFANTS

(Continued from page 624)

PROPRIETARY FOODS FOR CHILDREN

These may be divided into two classes; those which are designed to be used instead of milk, and those that are designed to be used in addition to milk. Those that are used alone, as substitutes for milk, are largely composed of dried cow's milk with more or less addition of protein, starch, or malt-sugars.

Whatever the food selected, it must be sufficient and represent all of the elements required by the child for his growth and health.

It has seemed to be a fact that children brought up on these artificially prepared foods were prone to the development of scurvy and perhaps rickets. Such a cause for rickets might be doubtful; such a cause for scurvy seems to be unquestionable, although it may be very mild in form and often is not recognized.

Many times a food seems to agree with the child as far as its apparent digestion, nutrition and increased weight are concerned, but in many cases the child, if attacked by disease, does not have the ability to withstand the disease as well as does the milk-fed child. It loses weight rapidly and its muscles are more flabby. Perhaps what the child has lost by the deprivation of milk may be the cause of insidious blood conditions and other nutritional disturbances which occur in later childhood and during adolescence. Certainly, if antibodies taken in with its mother's milk, and immunities taken in with its mother's milk are valuable factors in the child's welfare, as they seem to be, and if certain kinds of immunity are received from cow's milk, it would seem that if the mother cannot nurse the child, cow's milk is the food of choice. Still, in certain instances, for short periods, a good artificially prepared baby food may be of marked advantage.

Certain kinds of indigestion are cured by a change from cow's milk to an artificial food, but it seems unwise to keep a child long on an artificial food alone, although the class of foods that are added to cow's milk are often, unquestionably, of value. Most of these foods have a low fat percentage, and the child will be benefited temporarily by a change to such an artificial food, if fat was causing a disturbance.

Many of these foods contain large amounts of starch, and a young child digests starch poorly. After six months the addition of the extra starch to his food may be of advantage rather than a disadvantage, as before many months he will begin to take starch with more solid food. Those that contain maltose and dextrin have the advantages described under the use of dextrinized and malt foods in certain kinds of indigestion.

Some of these foods are of advantage, when used in small amount, when the child, during an intestinal inflammation, has been entirely deprived of milk for from twenty-four to forty-eight hours.

CHOCOLATE AND COCOA

The question is frequently asked by mothers and nurses as to the exact value of chocolate and cocoa, or the difference in their value. The answer cannot be better given than it was in answer to a correspondent in The Journal, Dec. 30, 1911, page 2158. The values of these foods are as follows:

The food value of chocolate and cocoa depends chiefly on their content of carbohydrates and fat. Cocoa contains about 15 per cent. of nitrogenous matter, but this is not all of a nutritious character. The amount of fat varies greatly, since a considerable portion of it is removed in the process of preparation for use as food. In the native cocoa it amounts to from 40 to 50 per cent. If we estimate the carbohydrates and nitrogenous material in prepared cocoa at 25 per cent. and the fat at 25 per cent., the nutritive value of 100 gm. of cocoa would be approximately 325 calories. As the amount commonly used for a cup of the beverage is about 5 gm., the nutritive value due to the amount of cocoa in the cup would be about 16 calories.

Chocolate contains 15 per cent. of fat, 5 per cent. of nitrogenous substance, and about 60 per cent. of sugar. The nutritive value of 100 gm. of chocolate would therefore be approximately 410 calories. If 5 gm. of chocolate is used to make a cup of the beverage, the nutritive value of the chocolate employed would be approximately 20 calories.

The basic substance contained in cocoa and chocolate is theobromin or dimethyl-xanthin, a substance related to uric acid. It is a slight stimulant to the nervous system and an active stimulant of the heart and muscles. It is also an active diuretic. It stimulates the nerves less than caffein, and hence the beverages which contain it are less disturbing than coffee. The amount of theobromin ordinarily taken is so small that its physiologic action is insignificant. Long-continued use, however, is said to be likely to produce gastric disturbances.

MILK PURITY

While the proper care of milk is now thoroughly understood, it will perhaps do no harm to refresh our memories concerning milk facts. These facts are ably described in a dissertation by L. A. Rogers, and issued in Farmers' Bulletin 348 of the United States Department of Agriculture. This bulletin is freely quoted.

A cubic centimeter of milk, approximately 25 drops, can contain thousands, millions and even hundreds of millions of bacteria. A single drop may contain 40,000,000 bacteria.

Freezing does not kill many bacteria, although 32 F. will stop growth. From 35 to 70 F. the growth of bacteria in milk is retarded; from 70 to 100 F. the

bacterial growth is most rapid; a little above 100 F. the growth ceases; at 212 F., the boiling point of water, all bacteria are killed. While a temperature of 125 F. may destroy a very few weak bacteria, a ten-minute exposure to 150 or 160 F. is fatal to nearly all bacteria which do not form spores. Spores are often destroyed only at boiling point, and some only by prolonged boiling. Much higher temperature is required when dry heat is used.

Milk, when secreted, is bacteria-free, unless the udder is injured or diseased. The real contamination occurs after the milk has left the udder and in spite of care is soon contaminated by dirt, dust, etc., especially manure dust, which contains large numbers of bacteria. Contamination of course also occurs from imperfectly cleansed pails, cans and jars, or from unboiled cloths used in straining milk. Even coolers may become contaminated, to say nothing of improperly washed bottles. The kinds of bacteria vary with the season of the year and the place in which the cow is milked.

As is well recognized, milk acquires flavors from all kinds of odors. They may come from the food the cow has eaten, or from disturbances of the cow. Odors may be acquired by uncovered milk from many kinds of food and fruits. Milk may acquire a flavor from bacteria.

Milk becomes soured by the action of some bacteria which break up the milk-sugar into lactic acid, consequently are often called lactic acid bacteria. These bacteria do not have spores, and are readily destroyed without boiling the milk. The acid formed by the action of these lactic acid bacteria causes the formation of casein, which precipitates in the form of fine particles suspended in the soured milk. When this acid has sufficiently increased in amount the casein becomes a firm mass, and the milk is then said to be curdled. This result is hastened by heating. Milk that has undergone a pure lactic acid fermentation has a firm curd free from gas bubbles, and with a small amount of whey on the surface. When shaken the curd breaks up into small particles which settle slowly, leaving the clear whey. The milk should have a pleasant acid taste. These bacteria and the consequent chemically changed substances are not poisonous.

By the time a milk has become sour to the taste, the growth of nearly all non-acid-forming bacteria is checked, and the activity of the lactic acid bacteria themselves is checked. Consequently, sour milk usually contains a nearly pure culture of one, or at most two or three closely related bacteria. On account of these facts it is necessary to cool milk as soon as possible after milking to below the temperature at which lactic acid bacteria are apt to grow rapidly. This temperature should be about 50 F.

When milk enters the baby's stomach, the casein is precipitated by an enzyme (rennet) of the gastric juice and forms a firm curd. This curd has no sour taste. These curds are then acted on by the pepsin, and the digested milk is then ready to pass to the intestines for absorption.

When milk has a distinctly bitter taste it may be caused "by weeds the cow has eaten, by an abnormal condition of the udder, by an advanced period of lactation, or by the action of certain bacteria." The bacteria which cause this bitterness in unheated milk are generally of the acid-forming class and hence are better able to survive the lactic acid bacteria. The acid formed by this group of bacteria is usually butyric and not lactic.

The disease-producing or pathologic bacteria that occur in milk are the germs of tuberculosis, diphtheria, scarlet fever, typhoid fever and probably those that cause some forms of intestinal inflammation. The danger of milk becoming contaminated in spite of all dairy and handling care must never be forgotten. A drop of water, a speck of dust, or the legs of a fly may bring to an uncovered milk bacteria which will multiply enormously before the milk is taken as a food.

As above shown, pasteurization, or heating milk to an ordinary temperature without boiling, does not kill the spores of many pathologic bacteria. Sterilization, or boiling for ten to twenty minutes, does kill most spores.

It has lately been shown by Schorer and Rosenau[1] that many of the automatically working pasteurizing machines do not uniformly heat the milk, at least not until they have been in operation for several minutes. They therefore recommend that the milk passing through the instrument for the first ten minutes should be passed through the pasteurizer again. The efficiency of the apparatus showed on bacteriologic test that tubercle bacilli were not always killed. They found that if the milk reached 140 F. and was held there for twenty minutes the tubercle bacilli and typhoid bacilli were killed. They therefore believe the only pasteurization of safety to be that of a temperature of 145 F. maintained from thirty to forty-five minutes.

It has recently been shown in England[2] that boiling milk does not impair its nutritive value, and does not seem to be a cause of either constipation or rickets. The advantage of boiling milk as compared with the ordinary pasteurization in destroying bacteria and spores should be generally recognized; hence the above findings are of great sanitary interest.

The following rules should be observed by the mother or nurse:

1. The milk should be known to come from a dairy up to the sanitary standards, now well established; and the milk should be received cool.

2. The bottles should be kept cool both summer and winter, and best in a compartment separate from any other food. The milk should never be uncovered.

3. Utensils used for preparing the baby's milk should be washed thoroughly with hot water and soap as soon as they are empty, and then cleansed with boiling water.

(To be continued)

An Expression of Gratitude.—The lack of appreciation, not to say ingratitude, of patients, has come to be almost proverbial in the medical profession. Therefore it is refreshing to come across an exception to this general rule of conduct, even though it comes from distant China, where its occurrence is perhaps to be explained by the usually topsy-turvy method of doing things. However that may be, it gives us pleasure to copy from the *China Press* of Shanghai the following voluntary contribution to the benevolence and skill of a colleague:

"THANKS TO THE GOOD DOCTOR.—In November last my son, Anwen, was very sick here in Shanghai. The disease was something like consumption. All the doctors said that they could do nothing for the boy. Just then Dr. ———— of the United States came to Shanghai, when he looked at my boy, he said that the sickness was really serious. However there might be a little hope. Consequently he brought the child to his hospital in Soochow. The doctor and his son-in-law, Dr. ————, carefully studied the disease. The next day he opened the abdomen of the sick with a long pin, and from the hole flowed out twelve bottles of pus, in which there were multitudes of poisonous animalcules. All such animalcules must be destroyed. Therefore the back part of the abdomen was widely opened and a rib was sawed away. At last the poison was washed cleanly away and the opening sewed up. Afterward my sick boy gradually recovered and came back to life again. How wonderful is the doctor art! Even the love of parents is not so great as his. I relate this story in order that the goodness of the doctor may be known among the community. LO SO TSING, Soochow."

1. Schorer and Rosenau: Jour. Med. Research, Boston, April, 1912.

2. Local Government Board on Public Health and Medical Subjects, New Series, No. 63.

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THE NON-SURGICAL TREATMENT OF CANCER

As surgical skill and the ability to diagnose advance, there is a decrease in the mortality rate of many so-called surgical diseases. This is true in some measure of cancer when diagnosed in the earlier stages. The hopelessness of advanced cases from a surgical point of view continues to be the incentive to tireless efforts to discover an effective non-surgical cure for cancer.

The non-operative treatment of carcinoma may be classified under five general heads: ferment therapy, physicotherapy, chemotherapy, serotherapy and tumor tissue or vaccine therapy.

The first advocates of ferment therapy (Lussana, Macini, Bouchut and Péan), advised the injection of gastric juice or pepsin directly into the tumor. Shaw-Mackenzie, from a hypothetical standpoint, advocated the use of trypsin, and later it was shown (by Blumenthal and Wolf) that the proteins of cancer, in contradistinction to other tissue proteins, are far less resistant to trypsin than to pepsin. Beard reported success with subcutaneous injections of trypsin combined with amylopsin; others tried ferments obtained from the liver, etc., and Sticker and Falk stood sponsors for carbenzyme, a combination of vegetable charcoal and trypsin. Much was promised, but, with the possible exception of the originator of the particular treatment, those who tried them were disappointed.

Roentgen rays, while practically powerless in internal cancer, have a definite curative action on certain superficial cancers and are used at present with success in the treatment of rodent ulcer. Radium, which on its advent was hailed as the long-sought curative agent, quickly fell below expectations; of other physical agents, such as high-frequency currents, carbon dioxid snow and fulguration, none has proved effective in internal cancer.

Chemotherapy of cancer dates back to the very beginning of the history of medicine; almost every conceivable drug or chemical has at some time had its advocate. Arsenic in its various forms probably has been the most favored; atoxyl and salvarsan have been tried (by Czerny and Caen and Blumenthal). Undoubtedly the most startling event in chemotherapy of carcinoma is Wassermann's recent work with selen-eosin in carcinoma of mice. Because of its extreme toxicity this substance so far has been used only in animal experiments. Malaria and streptococcus infections have long been reputed to have a beneficial action on cancer. Busch, after observing three cases which showed marked improvement following erysipelas, deliberately infected cancer patients with erysipelas and reported favorable results. Nocht was persuaded to transmit malaria to two cancer patients; both died, it is said, of the malaria. Coley elaborated a mixture of streptococcus and prodigiosus products; though failing to inhibit carcinoma, the mixture is credited with definite cures of sarcoma.

Various workers injected animals with emulsions of cancer in the hope that an active anticancer serum might be obtained, but the therapeutic results in no degree corresponded to the demands of the hypothesis on which the work was based. Serums of animals injected with organisms alleged to be the causal agents of cancer have all failed.

Finally, we come to the treatment of cancer with tumor material of various kinds, a sort of inoculation or vaccine therapy. Such inoculations have been found to have a definite protective effect in animals against transplantable tumors and apparently also to cure growing transplanted tumors, but these facts do not seem to apply to spontaneous tumors.[1] The startling results obtained by Hodenpyl and Lewin from the injection of patients with ascitic fluid obtained from a patient with cancer of the liver are not yet forgotten, but unfortunately they seem destined soon to be, as nothing more is being said in regard to the matter.

Stimulated by the apparently successful results obtained by LeBertrand, and by Coca and Gilman, a trial of vaccine treatment of cancer was carried out by Coca, Derrance and Lebredo.[2] Under the most stringent aseptic precautions tumor tissue was ground up with an equal volume of normal saline solution and made into vaccines. Vaccine A consisted of the supernatant fluid after centrifuging a few minutes; Vaccine B of the entire material. Injections were made subcutaneously in seventy-nine selected cases. Coca and his co-workers could demonstrate no antibodies either with the method of complement deviation or with that of specific precipitation in serum from patients who were injected with such material. Among the patients treated were twenty-four in whom complete removal surgically of the tumor had been made; in seventeen patients there were either small primary tumors or small recurrences; thirty-eight patients had large tumors. After repeated injections four of the large tumors showed a marked diminution in size, and one of the smaller ones, a malignant ulcer, lost its malignant character and began to heal. Despite the precautions in the preparation of the vaccines (phenol and formaldehyd solution were added

1. For review of literature see Coca: Vaccination in Cancer, Ztschr. f. Immunitätsforsch., 1912, xiii, 524.

2. Coca, Derrance and Lebredo: Ztschr. f. Immunitätsforsch., u. exper. Therap., 1912, xiii, 543.

to some of them) local infection, which sometimes progressed to abscess formation, occasionally occurred at the site of the injections. It is interesting to note in the light of the results with the Coley treatment that the four patients who improved most were among those in whom local infection occurred. In only two cases in which the tumors apparently decreased in size was there no evident infection; nevertheless, Coca and his collaborators conclude that the reduction in size of these two tumors most probably was due to the absorption of inflammatory exudates. In no one of the seventy-nine cases could improvement be ascribed directly to a process of immunization produced by the injection of tumor cells. Neither were such injections capable of preventing recurrences even after apparently complete excision of the primary growth. In 52 per cent. of the cases there were recurrences later. The physical condition of most of the patients improved under the treatment, and in the opinion of the authors this constitutes the sole indication for this form of inoculation in carcinoma.

Despite the negative results so far as cure goes, this contribution to the literature on the non-surgical treatment of cancer is of great value. The decisive elimination of one possibility after another brings us nearer and nearer to the solution of this great problem.

SUICIDE STATISTICS

Dr. Hoffman, the actuary of the Prudential Life-Insurance Company, submits that in 1911 for the first time in the history of small cities in the United States their suicide rate exceeded the rate for cities of over 250,000 population, and has increased by nearly one-half the rate of 13.6 per hundred thousand which obtained during the decade ending with 1910. The rate in our small cities last year was 19.8 per hundred thousand, whereas the rate of suicide in twenty-one cities with 250,000 or over was 19.5 per hundred thousand population. The latter rate was 3.2 less than the average for large cities during the previous decade. In seventy-nine small cities out of 100 cities of all sizes, 1,395 persons killed themselves during 1911, as against 957 "expected" suicides; that is, had the suicide rate of small cities for 1911 been the same as during the previous decade there would have been only 957 suicides instead of 1,395.

In 100 American cities (seventy-nine under 250,000 and twenty-one over that population) the rate of suicide has grown steadily from 12.8 per hundred thousand twenty years ago, to 20.3 in the five-year period ending with 1911. In 1910 the rate throughout our registration area was sixteen per hundred thousand, so that there must have been 15,000 suicides in the United States last year.

Dr. Hoffman observes that it would require an extended analysis of individual suicides to establish, even with approximate accuracy, the true cause of this reversal of normal conditions, since the change is in marked contrast to the long-established experience that the suicide rate in small cities is decidedly below the average for large communities.

With reference to his compilation of statistics of American cities he presents, however, Prussia's suicide record, from which some deductions are possible: The Prussian suicide rate during 1910 was twenty-one, about that of American cities. There were thirty-two male suicides as against ten female suicides. The suicide mortality under 15 years is 0.68, with a quick and marked rise to 16.61 between the fifteenth and nineteenth years, and to 26.84 between the ages of 20 and 24 (the late period of adolescence); during the latter period defective education, mental, moral and economic, seems responsible for the very high suicide frequency. But the highest rates are from 34.89 at 40 years to 58.71 at the seventy-ninth year—the period when those given to mental depression manifest decadence of mind and body. Suicides are considered to be relatively few among women because, though they experience the craving for death as frequently as do men, they lack courage or are more strongly influenced by religious and moral principles. It is probable that women have no less courage than men in committing suicide, but that they are better fortified against the temptation.

For all ages the principal cause of suicide in Prussia was unsoundness of mind (22.8 per cent. of the male and 40.6 per cent. of the female suicides); next came bodily disease (10 per cent. males and 9.3 per cent. females). Nervous diseases accounted for 4.3 and 7.4 per cent., respectively. Alcoholism was blamed for 10.1 per cent. male, and but 1.5 per cent. female suicides. Sorrow and distress accounted for 12.2 male and 7.7 per cent. female suicides.

These causes seem to operate in proportion to the progress and complexity of civilization, and to this era's moral and religious perplexities and social discontent.

THE INTERNAL SECRETION OF THE ADRENALS

The question as to what extent the ductless glands which produce a so-called internal secretion are under the dominance of the nervous system in the elaboration or output of their potent products has been difficult to solve. The precise chemical nature of the active principles involved has as yet been discovered in few instances only, so that their detection or the estimation of their content in blood or tissues has approached the impossible. The epinephrin of the adrenals has furnished a conspicuous exception in that its chemical structure is now known and its physiologic effects determined and measurable. Accordingly the adrenals appear to offer an unusual opportunity to test the possibility that such glands are regulated in their function by some innervating mechanism.

Years ago Dreyer[1] argued for a secretory innervation of the adrenals. He showed that an active principle is

1. Dreyer, G. P.: Secretory Nerves to the Suprarenal Capsules, Am. Jour. Physiol., 1899, ii, 203.

present in blood collected from the adrenal vein and that its content, as measured by the extent of the physiologic effects it is capable of producing, is increased by electrical stimulation of the splanchnic nerve below the diaphragm. The idea of secretory nerves was, of course, not a new one; but there had been no proof for the existence of such nerves to ductless glands with an internal secretion.

Despite this evidence, the doctrine of secretory innervation of the adrenals has awakened little recognition until of late. Professor Leon Asher of Berne has subjected the matter to renewed investigation. He remarks, quite appropriately, that the occurrence of the potent epinephrin in a tissue is no conclusive evidence that it forms part of an internal secretion.[2] Are not the bile constituents specifically produced by the liver always missing even in the minutest amounts from the blood-stream, although the quantities in which they are present in the organ might seem to justify the assumption that they must be transmitted in part into the circulation?

By the ingenious method of stimulating the splanchnic nerves after all the abdominal viscera except the adrenals have been extirpated, Asher showed that a rise in blood-pressure can still be brought about. Proof is thus afforded that as the result of the nerve stimulation the adrenals have furnished the pressure-raising epinephrin to the rest of the body; in other words, that an internal secretion has actually been furnished. When the adrenal veins are obstructed no such result can be obtained. Furthermore, a suitable prolonged stimulation is attended by a continued maintenance of higher pressure. All of these facts speak for the secretory function of the splanchnics in relation to the adrenals put in evidence by the automatic response of the sensitive circulatory system. Pathologic as well as physiologic consequences at once suggest themselves in connection with such interrelations between the nervous and glandular systems. A continued overproduction of epinephrin depending on abnormal stimulation of the splanchnic system may bring with it undue blood-pressure, along with other symptoms, such as glycosuria, in association with this situation. Another possible interrelation between adrenals, nervous system and familiar disease is thereby brought into prominence.

2. Asher, L.: Die innere Sekretion der Nebenniere und deren Innervation, Ztschr. f. Biol., 1912, lviii, 274.

THE TREATMENT OF MALIGNANT TUMORS BASED ON THE AFFINITY OF HEAVY METALS FOR TUMOR CELLS

The results obtained by Wassermann with selenium-eosin in the treatment of transplantable cancer are rather startling. Actual cures are reported to have been obtained by the injection into the blood of a combination of selenium and eosin. It has been shown that selenium-eosin has a definite affinity for cancer cells, the selenium being deposited about the nuclei and causing a complete disintegration of the cells. After repeated injections the tumor becomes soft and fluctuating; ultimately it may be absorbed completely. The extreme toxicity of selenium, however, and the harmful effects of rapid absorption of large tumors make the treatment very hazardous and its death-rate high, so that its application to man is not warranted. Nevertheless, Wassermann's work opens a new avenue of research and encourages the hope that a cure for human cancer some day may be discovered.

Other efforts in the same direction are forthcoming. Thus Neuberg, Caspari and Löhe,[1] working on the hypothesis that the greater autolytic power of tumor tissue as compared with normal tissue must be due either to a direct increase of certain ferments or to a defect in protective elements, tried to produce an active autolysis *in vitro* by the addition of colloids of a number of the heavy metals; therefore the workers mentioned tried to obtain salts and other compounds of heavy metals in such form as to be non-toxic for the host and yet to exercise a direct action on the tumor. This, it is said, they have succeeded in doing, but it is regrettable that they have chosen to withhold accurate information in regard to the substance used, merely stating that they employ "definite, for the most part crystalline, organic chemical compounds of a rather complex nature" of many of the heavy metals such as lead, silver, arsenic, antimony, vanadium, mercury, copper, gold, etc. Cobalt and silver were found to yield the most marked effects. The dosage ranged from 0.005 to 0.066 mg. per gram weight of the host.

The reaction following intravenous injection is described as most striking and rapid. Frequently within a minute afterward the tumor, it is said, may become hyperemic. A condition of stasis so extreme may develop that at times a serous exudate oozes from the surface. Hemorrhages may occur within the tumor, which in twenty-four hours becomes soft and fluctuating. Aspiration gives the detritus of a typical autolysate, with various protein end-products—albumoses, peptones, amido-acids, etc. Microscopically no intact tumor cells are found. The injected metal can be isolated from the detritus by chemical means. Primary and transplanted carcinomas of mice, rat sarcomas, and an adenocarcinoma of a dog all yielded readily to the treatment and disappeared completely. As many as twelve injections were given in some cases. In the case of the dog, however, it was found that the toxic dose was smaller for unit of body weight than that for the rat, and still smaller than that for the mouse. The dog sickened during the operation and died some six days afterward. Its death is attributed by the authors to the distemper, but was probably hastened by the absorption of the toxic products of autolysis from the softened tumor.

Although they are not at present capable of application to human cancer, these experiments are valuable

1. Neuberg, C., Caspari, W., and Löhe, H.: Berl. klin. Wchnschr., 1912, xlix, 1405.

because they show that malignant tumors are capable of a specific reaction to agents which do not injure the other tissues. It is hoped that trial of the metal compounds by other workers will give like results. Further developments will be awaited with great interest.

THE RESISTANCE OF PROTEINS TO BACTERIA

Only a few years ago it was current doctrine that proteins were available for the physiologic uses of the body without more than incipient and insignificant chemical change. Solubility was the essential property required. To-day we know that before the proteins are utilized by the animal organism they must experience that profound cleavage which attends the functions of digestion. Accordingly the immediate sources of nutriment are the digestion products of the proteins rather than the native albumins themselves.

It is consonant with current ideas regarding the action of microorganisms to think of all albuminous substances as being particularly prone to putrefaction. The readiness with which bacteria grow in mixtures or solutions containing proteins and produce the characteristic decompositions therein is a familiar phenomenon of daily life, so that it might almost appear superfluous to ask whether they can utilize proteins directly. It may seem somewhat surprising, therefore, to learn that preparations of pure proteins when left exposed to the germ-laden air do not appear to be broken down by bacteria, although molds are able to grow in them. The point here raised has been the subject of an experimental inquiry at the Lister Institute in London.[1] It must be borne in mind that our familiar nutrient mediums for bacteria invariably contain nitrogenous food-material other than proteins themselves. One need only recall the use of bouillon and the success of even purely synthetic mediums. Bainbridge has found that the organisms examined by him do not break down appreciable quantities of egg-albumin and serum-protein, even in the presence of sufficient non-protein nitrogenous food to ensure vigorous bacterial growth. When solutions of pure egg-albumin, serum-protein or alkali-albumin are inoculated, the bacteria used diminish in number when the seedings are large, but multiply to some extent when the seedings are small—in the latter case presumably owing to the use of traces of non-protein substances in the medium. There is no chemical evidence that the organisms studied are able to break down pure egg-albumin, and the presumption is that the bacteria do not use unaltered protein as food. Here, then, is an analogy with the situation in the case of the higher organisms.

The facts just recited may have a bearing on the antiseptic properties of egg-white lately investigated in Professor Rettger's laboratory at Yale University.[2] It has been taken for granted that the only protection which an egg has against bacterial invasion and subsequent "spoiling" is the shell. As Rettger remarks, it cannot be disputed that the shell serves as a good protective covering. This may be explained largely by the fact that "a normal egg is coated with a delicate layer of gelatinous substance. This coating is easily injured or destroyed; hence the common belief that washing of eggs lessens their keeping qualities." In agreement with Laschtschenko, another important agent in the prevention of bacterial invasion into the interior of the egg has been found in the antiseptic and bactericidal properties of the egg-white. It seems quite probable that these are due to a specific antisubstance. The bactericidal power is destroyed at a temperature of 65 C. and it is not present in the yolk.

The evidence is scarcely sufficient, as yet, to warrant one in hazarding an explanation of this useful property of egg-white. Can it be, in view of what has been said, that "pure, unchanged proteins may in a measure play the part of an antiseptic or disinfectant?"

1. Bainbridge: The Action of Certain Bacteria on Proteins, Jour. Hyg., 1911, xi, 34.
2. Rettger, L. F., and Sperry, J. A.: The Antiseptic and Bactericidal Properties of Egg-White, Jour. Med. Research, 1912, xxvi, 55.

THE CAUSES OF SOME RAPID CHANGES IN BODY WEIGHT

It has been a common assumption that very rapid losses of body weight are due to largely increased loss of water from the body. The marked weight changes which occur within a few minutes during a boat race by a college crew afford a case in point. Perspiration is excessive as the result of the attempt of the body to get rid of its surplus heat; and it has usually been believed that the greater part of decline in weight is directly attributable to the water output.

It is, of course, not unbelievable that material losses of stored tissue material may explain decided changes in body weight under certain conditions. As a matter of fact it has been difficult to make any sweeping statements as to the causes involved — as to whether such losses primarily involve water or metabolized tissue — because of the paucity of data on the water balance of the body. Few experimental researches furnish the data which will enable one to deduce the daily intake of water aside from that entering the body in the form of fluids; yet in view of the fact that most of our common food materials, such as meats, fruits, vegetables, etc., contain a large aoundance of water, amounting usually to more than half and sometimes as high as 90 per cent. of the products ingested, obviously water enters the organism in varied association with the true nutrients. This content of water needs to be known before one can learn the whole story of the income and outgo. In addition to all this, water is formed by the oxidative reaction of metabolism; but this particular contribution is not readily ascertainable.

The physician is frequently concerned with what may be termed acute losses of body weight. For him it is a matter of moment to know whether they represent

losses of water or losses of more permanent tissue. Again, he is interested, in the case of reduction cures in obesity, to know whether the fall in weight accomplished by skilfully instituted dietary measures represents actual loss of tissue — a more permanent result — or merely a transitory loss of water which can be and frequently is recovered as readily as it was eliminated from the organism. It is of interest therefore to note the careful records which have been made by Galeotti and Signorelli[1] under conditions of rest and of mountaineering, the latter well known to be attended at times with marked changes in weight in the direction of loss. The investigators measured the intake of food and drink, and calculated the water content; the water losses by the various excretory paths (skin, lungs, intestine, kidney) were likewise ascertained. The immediate outcome of the study was the demonstration that under normal conditions the daily variations in body weight were almost always dependent on the water balance of the body. Retention of water coincided with gain of weight, and the reverse had a corresponding analogy. The largest water excretion occurred through the kidneys and bowel, the skin coming next, and the lungs last as a channel for loss of water. Under conditions of very vigorous exertion the skin may assume the first place.

No one would, of course, maintain that the questions of variation in body weight are all centered in the relative gains or losses of water. Undoubtedly, however, the changes in the balance of water intake and output play an important rôle in the speedy changes which make themselves familiar under a large variety of circumstances.

Current Comment

THE ACTIVE PRINCIPLE OF OPIUM SMOKE

Tobacco smoke and opium smoke are features of no mean significance in the routine of all too many individuals. In view of the effects of these products, it is surprising that so little is known of their composition. There is an impression current that the physiologic action of smoked opium is equivalent to that of the most potent constituent of the crude drug, namely, morphin; but since, in the particular mode of intoxication under discussion, the effective agent must of necessity pass into the smoke, it follows that the morphin must be sublimed if it is to pass as such into the products of combustion. The debate as to the real intoxicating agent therefore has centered about the possibility of subliming this alkaloid unchanged; and those who have denied this have sought the toxic factor in decomposition products such as pyrrol, pyridin and similar compounds. The question appears to have received a solution. Dr. Pott of the Pharmacologic Institute in Freiburg has actually demonstrated that morphin can be sublimed unchanged and therefore can actually be present in opium smoke.[1] Furthermore, he has succeeded in demonstrating that the action of smoked opium is due to the presence of undecomposed morphin in the smoke. Indeed, some of the more subtle and characteristic toxicologic effects of morphin can be duplicated by inhalation of opium smoke or its condensation products. It is interesting to note as a bit of refined experimental technic that Pott succeeded in inducing specific morphin reactions in mice by injecting preparations from the blood of larger animals that had been caused to inhale opium smoke.

1. Galeotti and Signorelli: Wasserbilanz im Hochgebirge, Biochem. Ztschr., 1912, xli, 268.

1. Pott, P.: Die wirksame Substanz des Opiumrauches, Biochem. Ztschr., 1912, xlii, 67.

INTESTINAL STASIS IN CHILDREN

In searching for apparently complex and obscure causes for indefinite symptoms it not infrequently happens that simpler, more obvious conditions are overlooked. The results of intestinal stasis in adults are quite well known. In children, the picture is developed more fully, and if we accept the statements of Barrington Ward[2] the results are far-reaching. In tuberculous joint disease, rheumatoid arthritis, ulcerative colitis and appendicitis, intestinal stasis has been commonly found. Children suffering from such stagnation are either dull and lethargic or querulous; they are thin and weakly, and tend continuously to lose weight; their metabolism is feeble. The latter symptoms are so constant that increase in weight is absolute evidence that stasis has been overcome. Skin staining is always present, the neck, axillæ, flanks and flexures of the limbs being the sites usually chosen. There is also a tendency to evil-smelling perspiration. As diagnostic of the condition, frequency of motions is unreliable. The only reliable means of securing data on the stasis is by *x*-ray bismuth photographs. A standard has been established, the passage through the alimentary canal taking twenty-four hours in a normal child, while fifty to 100 hours are required in children suffering from stasis. In one case of tuberculous joint diseases the time required was 160 hours. Tuberculosis is a common end-result. It is believed that in this condition infection by the bowel in children is much more common than in adults. It is also believed that infections of the urinary tract with *Bacillus coli* may be traced to the same source. As evidence in this regard it is pointed out that as infection of the right side is more common and the highest degree of stasis is usually in the cecum, a relationship seems to exist. Nevertheless it is not clear how the bacillus reaches the right pelvis and ureter in such instances. Two cases are reported in which excellent results were achieved by overcoming the stasis. In one case in which there was a marked rheumatoid arthritis, a stasis of fifty-two hours was determined. Arbuthnot Lane, under whose direction the observations were made, divided the ileum and planted it low down in the pelvic colon. Rapid and uneventful recovery took place. There began a constant increase in weight at once; the symptoms disappeared entirely, and in three months the child appeared bright and healthy with the exception of two joints in which marked contractures had taken place previously. In a case of tuberculous joint disease, a similar rapid and

2. Barrington-Ward: Surg., Gynec. and Obst., 1912, xv, 46.

marked improvement occurred. In early stages general dietetic measures yield satisfactory results. Ward and Lane in such cases have given paraffin with advantage. In later conditions, when gross adhesions have formed, stronger measures are advised, and in such instances Lane has transplanted the ileum into the pelvic colon successfully, even in children as young as 2 years, but of course such radical treatment cannot be applied generally. It is highly necessary to recognize the importance of the condition, and to seek for better prophylactic and medical methods of controlling it.

PHYSICIANS AND THE NERVOUS LIFE

The last three United States census reports gave the death-rate for physicians as higher than that of any other professional class. Nervous diseases constitute the most important factor in this death-rate. Commenting on these figures, W. K. Newcomb[1] enumerates the probable causes for this unsatisfactory showing—the urgent call interrupting the moment of relaxation, the telephone bell breaking in on the hour devoted to quiet reading, the ever-present sense of responsibility and, most of all, what William James defines as "those absurd feelings of hurry and having no time . . . that breathlessness and tension, that solicitude of results, that lack of inner harmony and ease by which, with us, work is apt to be accompanied." Americans are inclined to measure efficiency subjectively—to make "the strenuous life" a synonym for "the efficient life." If a man reaches home at night a nervous wreck, he is apt to feel sure that he has spent his day effectively and well. Possibly even physicians, who from observation and theory know only too well the absurdity of this subconscious reasoning, are liable to be infected by it. The inexorable urgency of many of the physician's duties will never permit his life to flow with serene and rhythmic placidity; but doubtless it would be well worth while for most of us to spend a little time in analyzing and attempting to eliminate some of the causes for that wearing and useless haste and worry which shorten our days.

LYING AGAIN ILLEGAL

When Congress, in 1906, passed the federal Food and Drugs Act, colloquially known as the "pure food law," it declared in that act that any drug should be accounted misbranded

> "the package or label of which shall bear any statement . . . which shall be false or misleading in any particular . . ."

For nearly half a decade after the passage of this law it was generally believed, and the courts held, that it was illegal to make any statement on the label of a food or drug that was "false or misleading *in any particular.*" When the point was raised before the Supreme Court, however, that august body declared — by a majority of five to three — that the phrase "false or misleading in any particular" meant false or misleading in *certain particulars*, to wit, as applied only to the composition or sources of origin of the products. This decision, naturally, gave general cause for rejoicing among that swindling brotherhood which robs the sick and defrauds the mortally ill by selling worthless "cures" for cancer, consumption, etc. It is more than a year since the Supreme Court's decision so seriously crippled one of the most beneficent pieces of legislation of modern times. But Congress has again put up the bars and the President has signed Congressman Shirley's bill which so amends the Food and Drugs Act as to restore the broader meaning originally attributed to that piece of legislation. Mr. Shirley's amendment consists, essentially, in the addition of a third paragraph to Section 8 of the Food and Drugs Act. This paragraph reads:

> "If its package or label shall bear or contain any statement, design, or device regarding the curative or therapeutic effect of such article, or any of the ingredients or substances contained therein, which is false and fraudulent."

There can be no mistaking the intent of this amendment. It says to the "patent-medicine" faker in plain and unequivocal terms: "Thou shalt not lie."

COAL-SMOKE AND THE ETIOLOGY OF CANCER

Theories as to the etiology of cancer are many; facts are few. An interesting, if not convincing, theory is that of Green of Edinburgh[1] which has to do with the irritation caused by smoke and other combustion products of coal. After considerable study and investigation of the incidence of cancer as shown by the vital statistics records in England and Scotland, as well as by reports from other countries, Green attempts to show that the highest percentage of cancer cases occurs in cities and districts of hilly or uneven topography or contour and that cities built on flat or level ground have the lowest incidence of cancer, the figures varying closely in accordance with the variations in these topographical features as taken from official records, particularly in Scotland. He goes even further and attempts to show that even in cities built on level ground but having great variation in the sky-line or height of buildings there is also an increased incidence of cancer. The significance of this lies in the fact, according to Green, that this unevenness interferes with ventilation and perfect combustion of coal, resulting in smoky houses and the inhalation by the inhabitants of irritating gases. He quotes the statement that in the city of London from half a million to one million tons of sulphuric acid from coal-smoke are annually diffused into the air. He cites the fact that in warm or tropical countries, where little or no coal is burned, cancer is rare or absent, but appears in higher percentage the greater the distance from the equator, which, of course, means greater consumption of coal for purposes of warmth. Greenland and Iceland seem to be exceptions, but in Iceland, where turf is largely burned, and in Greenland where oil is the only substance used for light and fuel, cancer is rare. The consumption of coal in Iceland, however, is increasing, as is the occur-

1. Newcomb, W. K.: The Physician Considered as an Economic Factor, Illinois Med. Jour., July, 1912, p. 1.

1. Green, Charles E.: The Local Incidence of Cancer. Wm. Green & Sons, Edinburgh, 1912.

rence of cancer. Other instances are cited to prove the theory. Green marshals statistics ingeniously to support his theory. The candid reader will feel, however, that statistics, like mercenary soldiers, are too readily marshaled in support of any and every theory to be really formidable except as auxiliaries — at all events, where such a complex subject as pathology is concerned.

Medical News

ARKANSAS

Personal.—Dr. J. C. Hughes, Walnut Ridge, was shot at from ambush while riding along a country road August 4, but fortunately was uninjured.——Dr. C. R. Doyne, Conway, has been appointed assistant physician in the State Hospital for Nervous Diseases.——Dr. H. L. Routh, Batavia, who was seriously injured in a runaway accident a few weeks ago, is reported to be convalescing.——Dr. William J. Manglesdorf has been appointed city chemist of Little Rock, vice Dr. C. H. Hoffman, resigned.

New Hospitals.—The new State Hospital for Nervous Diseases, Little Rock, is now completed and will accommodate 150 patients.——The Fayetteville City Hospital is almost completed and will soon be ready to receive patients. The site for the hospital was donated by the will of S. K. Stone. The building is a two-story brick structure, on the first floor of which there are four four-bed wards. On the second floor there are seven private rooms and one ward.——A Pasteur institute has been established in Little Rock, which will be under the direction of Dr. Loyd O. Thompson, city bacteriologist.

COLORADO

Personal.—Dr. Robinson Bosworth, formerly a member of the staff of the Agnes Memorial Sanatorium, Denver, has been elected superintendent of the Arkansas Tuberculosis Sanatorium, Booneville, vice Dr. J. S. Shibley, resigned.

Education by Motion Pictures.—The State Board of Health is giving a series of motion picture shows in the various towns of the state on the "Fly Pest" and the "Man Who Learned." The latter is an illustrated lecture demonstrating the new methods of handling milk.

Leper in Denver.—C. W. Brownson, who admits that he escaped from the leper colony in San Francisco, is under surveillance in a tent at the Denver Isolation Hospital, Sand Creek, and the question of his return to California is at present puzzling the health authorities on account of the various states and counties lying between Denver and the coast, permission from all of which would have to be obtained before he could be returned to California.

ILLINOIS

State Board Wins Suit.—In the suit brought by the Illinois State Board of Health against L. G. Brown, Quincy, a so-called chiropractor, for practicing medicine without a license, the jury found the defendant guilty, August 15, and he was fined $100 and costs.

Gold Fish to Kill Mosquitoes.—Dr. G. G. Dowdall, chief surgeon of the Illinois Central System, has originated a plan to exterminate the mosquitoes along the lines of the road, by stocking the stagnant pools with goldfish minnows, which live on the larvæ of mosquitoes.

Medical Societies Entertained.—Dr. Carl E. Black, Jacksonville, entertained the medical societies of Morgan and Cass counties at his summer bungalow near Virginia, August 15. The affair was in honor of his father, Dr. Greene V. Black, Chicago, and addresses were made by Drs. Frank B. Norbury and George F. Kreider, Springfield, and James F. Percy, Galesburg.

Would Mandamus State Board.—A suit was commenced on August 16, in the Superior Court of Cook County, by Vito Dojno, a graduate of the University of Rome, Italy, who charges that the State Board of Health did not translate his examination papers properly. Dojno took the examination in Italian and failed to obtain the necessary mark. The state board holds that the translation was correct and that Dojno is not entitled to practice.

Physician in Trouble for Misconduct.—Dr. James A. Egan, secretary of the State Board of Health, has summoned Dr. Seth M. Wells, of Quincy, to a hearing October 15, at which Dr. Wells will be given opportunity to show why his license should not be revoked for unprofessional and dishonorable conduct, the particular charges being fraudulent representations in newspaper advertisements; and further, that his license in Illinois was fraudulently obtained, since he was a fugitive from justice of the State of Utah at the time the license was issued.

The Patten Fund Work.—The program for utilization of the $250,000 given Northwestern University by James A. Patten two years ago as an antituberculosis fund has been announced. Dr. Arthur I. Kendall, formerly of Harvard, has been placed in charge of the work as professor of bacteriology and will be assisted by the holders of four fellowships to each of whom the fund gives $600 a year. The gift made by Mr. Patten was for the purpose of advancing the scientific investigation of disease causes and the prevention of disease, the donor expressing the wish that particular attention be paid to the investigation of tuberculosis.

Chicago

Cuban Physicians Study Sanitation.—Drs. J. M. Penichet and R. Noguiera, health officers of Cuba, appointed by President Gomez to investigate sanitary methods, are studying health conditions in Chicago.

Pasteurization to Be Explained.—Arrangements have been made to operate a pasteurization plant in Chicago for ten days for the benefit of the public. All who are interested in the pure milk crusade will be invited to visit the plant and view the methods employed.

Personal.—Dr. Theodore B. Sachs, physician in chief to the Chicago-Winfield Sanatorium, has resigned.——Dr. and Mrs. E. N. Elliott have returned after a trip abroad.——Dr. Ernest S. Moore, physician in charge of the County Tuberculosis Hospital, Dunning, has resigned.

IOWA

Society Undertakes Hospital Management.—The lease of St. Elizabeth's Hospital, Fort Madison, to Dr. C. W. Wahrer expired August 15, and the management of the hospital reverted to the Fort Madison Medical Society.

Farewell to Dr. Rosenbladt.—The Audubon County Medical Society gave a dinner August 1 in honor of Dr. F. Rosenbladt, Audubon, who is about to make his home in Des Moines. Dr. Rosenbladt was presented with a gold ring bearing Masonic emblems.

Annual Clinic.—The annual alumni clinic of the State University College of Medicine, Iowa City, will be held October 22-23. Drs. William H. Welch and William S. Thayer, Johns Hopkins University, and Dr. P. D. Kerrison, New York City, are on the clinical program.

Personal.—Dr. E. T. Kegel, Iowa City, has been elected physician of Johnson County.——Dr. E. H. King has succeeded Dr. T. F. Beveridge as president of the board of directors of Hershey Hospital, Muscatine.——Dr. William F. Carver, Fort Dodge, was seriously injured by the overturning of his automobile near Ogden.——Dr. George F. Dolmage, Iowa City, has resigned as instructor in surgery in the University of Iowa School of Medicine and will practice in Buffalo Center. ——Dr. Frank R. Senska, Germania, has been assigned as a medical missionary to western Africa.

KENTUCKY

Cooperation and Disease Prevention.—The State Board of Health is endeavoring to enlist cooperation between the schools, churches and social enterprises in the prevention of disease. To this end a conference of representatives from each organization has been called during the meeting of the State Medical Association in Louisville, October 28-30.

Personal.—Dr. Joseph A. Goodson, Dixon, has been appointed superintendent of the Eastern Kentucky Hospital for the Insane, Lexington.——Dr. J. M. Morris, Louisville, is ill at his home with septicemia due to an infected wound of the finger.——Dr. J. W. Fitch, Louisville, slipped and fell, August 6, breaking his leg.

Eminent Chemist Dies.—Prof. Melville A. Scovell, director of the Kentucky Experiment Station, Lexington, dean of the College of Agriculture of the Kentucky State University and member of the State Board of Agriculture; prominent in the pure food work of the Department of Agriculture and a special agent of that department; a chemist of unusual ability;

chairman of the Official Dairy Test Commission at the World's Columbian Exposition in 1893; died at his home in Lexington, August 15, from angina pectoris.

Hookworm Work in Kentucky.—Dr. Arthur T. McCormack, assistant secretary of the State Board of Health, has received a letter from the executive secretary of the Rockefeller Sanitary Commission containing a report of the work of the board regarding hookworm in Kentucky. At the summer school for county health officers held in Louisville, July 8-11, hookworm disease was given great prominence. Illustrated lectures were delivered and about a thousand specimens are already on hand for examination at the state bacteriological laboratory, Bowling Green. He especially commended the organization of the medical profession of the state, the cooperation of practitioners in the work against hookworm, and the aggressive energy of the State Department of Health and of all persons connected with it.

MARYLAND

Personal.—Dr. Arlington G. Horine has been elected mayor of Brunswick.——Drs. W. M. Sterling, White Hall, Wright S. Sudler, Baltimore, G. Carville McCormick, Sparrows Point, James H. Wilson, Fowblesburg, Benjamin R. Benson, Jr., Cockeysville, and F. K. Nichols, Baltimore, have been appointed deputy local registrars of vital statistics for Baltimore County.——Dr. Victor F. Cullen, superintendent of the Maryland Tuberculosis Sanatorium, Sabillasville, was given a dinner and reception by the Merchants' and Manufacturers' Association of Cumberland, August 14.

Typhoid in Maryland.—The epidemic of typhoid at Cambridge is believed to be well under control. All but two of the fifty-four cases were traced to milk supplied from one dairy. The water supply of the city was found uncontaminated. Dr. Marshall L. Price, who is in charge of the situation, believes that the epidemic is practically at an end.——Dr. C. W. G. Rohrer, Baltimore, after investigating the typhoid outbreak at Westminster, reports that the source of infection was at the reservoir polluted by an open drain. On August 24 there were eleven cases of typhoid in the city.——At Cumberland nineteen cases of typhoid have been reported this month.

Baltimore

Russian Professor in Baltimore.—Dr. Ivan Koblukov, of the University of Moscow, is making a stay in Baltimore to study the work at the Johns Hopkins Hospital.

Possession of Cocain Not Illegal.—Assistant States Attorney Marchant has given an official opinion to the Board of Pharmacy that the Swann cocain ordinance passed in 1908 has been repealed by the antinarcotic law passed in 1912, and that consequently the possession of cocain is no longer illegal.

New Ward at Johns Hopkins.—A new four-story brick, fireproof structure is to be erected at Johns Hopkins Hospital to accommodate fifty-four patients. It will be connected with the main corridor. A new story will be added to ward "C," and a new dining-room for officers and reception-room will be provided.

MICHIGAN

College Becomes Extinct.—It is reported from reliable official sources that the Detroit Homeopathic College has voluntarily become extinct.

Tuberculosis Clinic for Kalamazoo.—Headquarters have been secured for a free clinic and dispensary for tuberculosis by the Kalamazoo Antituberculosis Society.

Personal.—Dr. N. S. MacDonald, Hancock, for fifteen years chief of the medical staff of the Quincy Mine, has resigned, to take effect October 1, when he will sail for Europe. He will be succeeded by Dr. A. F. Fischer, Hubbell.——Dr. R. A. Burke, Ishpeming, has resigned from the staff of the Ishpeming Hospital and as health officer of Ishpeming and will take charge of the work of the M. A. Hanna Company at its American mine, Diorite.——Dr. George S. Williams, Muskegon, has been appointed state medical inspector for the ninth congressional district.——Dr. J. J. Howard, Detroit, was attacked, August 9, by an unidentified assailant, who threw acid in Dr. Howard's face.

MISSISSIPPI

New Hospital.—The Clay County Medical Society has established a hospital in West Point.

Health Campaign.—Dr. W. L. Leathers, Director of Public Health of the state, announces that the boards of supervisors of Lauderdale, Jasper and Jefferson counties have appropriated the amount of money required for the conduct of the health campaign in these counties.

Personal.—Dr. M. J. L. Hoye, Meridian, health officer of Lauderdale County, has been appointed registrar of vital statistics for Meridian.——Dr. S. L. Rowan, assistant physician at the State Insane Hospital, Vicksburg, was painfully injured by a falling timber, August 3.——Dr. Albert Wood Jackson, has been appointed by the Minnesota State Board of Health, public health officer of Rochester, acting under Dr. Charles H. Mayo, local health officer.——Dr. J. C. French, health officer of Natchez, has resigned.——Dr. Thomas C. Newson, Independence, has been appointed assistant bacteriologist in the laboratory of the State Board of Health.——Dr. S. A. Gassaway, New Albany, was thrown from his buggy recently and seriously injured.

NEVADA

Date of State Meeting Changed.—The date of the meeting of the Nevada State Medical Association has been changed from September 10-12 to October 8-10.

NEW JERSEY

Medical Department of Library.—The new Carnegie Library at Elizabeth is to have a doctors' room in the basement, where periodical literature and reference books may be found and which may also be used as a smoking room.

Riverton's Fly Campaign.—Riverton is paying a bonus for dead flies, for the board of health, which is conducting a crusade to eliminate these pests, pays two cents a thousand for all caught in Riverton. So far 729,000 flies have been purchased.

NEW YORK

State Deporting Many Aliens.—The new State Bureau of Deportation reports to the State Hospital Commission that about 300 aliens are being deported weekly from New York.

Leper Released.—Sam Isen, the Bay City (Mich.) leper who has been under surveillance at the Ernest Wende Hospital, Buffalo, was released by the health commissioner the latter part of July.

D.P.H. for State Health Commissioner.—At the commencement exercises of Syracuse University, the degree of doctor of public health was conferred on Dr. Eugene H. Porter, New York City, as a mark of public recognition of the valuable work done by him and his department.

New Hospital Nearly Ready.—The new building of the German Deaconess Hospital, Buffalo, is practically completed and the equipment will permit of the opening of the hospital on or about September 1. About $200,000 was raised by public subscription last year for this building.

New York City

Apartment Building for Professional Men.—The house at 19 West Fifty-Fourth Street, which John D. Rockefeller, Jr., bought several months ago, is to be altered into an apartment building for physicians and dentists.

Flies Blamed for Typhoid Epidemic.—The recent epidemic of typhoid in Brooklyn is attributed by the bacteriologist of the Water Supply Department, Daniel D. Jackson, to flies in the cellars of new buildings where the building inspectors have failed to enforce the sanitary code.

Hospital Tenements Sold.—A portion of the property bequeathed by the Michael Valentine estate to the Presbyterian and Hahnemann hospitals has been sold. The value of the entire bequest is estimated at about $600,000.

Fewer Infant Deaths.—During the week ended August 17 there was only one death among the 17,000 babies under the care of the Baby Welfare Association. For this week there were only 353 deaths of infants under one year of age, compared with 408 for the corresponding week of 1911. Conditions in every borough were better than in the corresponding week of last year.

Hospital Appeals for Aid.—The Hospital for Deformities and Joint Diseases is making an appeal to the public for aid in completing and equipping its new building. This hospital has the largest clinic of its kind in the world, the attendance being between 150 and 200 daily. It is the only hospital in the city which takes adult patients with chronic joint diseases, congenital and acquired. Last year 29,322 cases came under the observation of the hospital physicians.

Need State Meat Inspection.—There has been a great deal of complaint recently because of the large quantities of meat unfit for human consumption which have been offered for sale in New York City, and relief has been sought from the State Commissioner of Agriculture who states that he can

give no relief from the grievance, as there is no state law providing for state inspection. It is said at the state commissioner's office that the local board of health in New York has full authority under the public health law to act in bad meat cases.

NORTH CAROLINA

Personal.—Dr. J. E. Brooks, formerly of Greensboro, but for several years superintendent of the State Sanatorium for Tuberculosis, Montrose, has resigned and Dr. M. Eugene Street, Glendon, has been placed in temporary charge of the institution.——Dr. John Hill Tucker, Charlotte, who was operated on for appendicitis in Norfolk, Va., several weeks ago, is convalescent.——Dr. R. A. Moore, Durham, who has been seriously ill, is reported to be improved.

PENNSYLVANIA

New Officers.—Wayne County Medical Society at Honesdale, July 18: president, Dr. Robert W. Brady, Honesdale; secretary and reporter, Dr. F. A. Lobb, Hawley.

Society Secures Home.—Berks County Medical Society has purchased, for $10,000, a house at Walnut and Madison streets, Reading, which will be used as a permanent home for the society.

Emergency Hospital Contract Awarded.—The commissioners of Lehigh County have awarded the contract for the erection of the isolation hospital at the Lehigh County Home, Allentown, for $7,875. The hospital will be owned jointly by the county and the city of Allentown.

New Indiana County Hospital.—The general committee of the Indiana Hospital Association has undertaken to raise $10,000 for a site for the new $60,000 county hospital to be erected south of Indiana. A coal operator has agreed to furnish the $60,000 for the hospital if a site is obtained.

Personal.—Dr. John M. J. Raunick has succeeded Dr. John C. Hutton as health officer of Harrisburg and secretary of the Municipal Health Board.——Dr. Herbert Hays Bullard has been appointed instructor in anatomy and neurology in the University of Pittsburgh Medical School, vice Dr. Edward D. Congdon, resigned, and Dr. Harry Ryerson Decker, demonstrator in anatomy, has been promoted to instructor in anatomy in the same institution.——Dr. Carlisle E. McKee, Braddock, has returned from abroad.——Dr. W. A. H. Detweiler, Schuylkill Haven, was painfully injured in an automobile accident, August 17.

Discharged Patients Form Society.—In order to keep in touch with discharged patients from the Philadelphia Jewish Sanatorium at Eaglevillle, an organization, known as the Jewish Sanatorium Patients' Antituberculosis Alliance, has been formed. They hold regular meetings at which a doctor attends to instruct the ex-patients, when necessary, as to the precautions they must use in order to keep in good condition. The sanitarium hopes in this way to reduce the percentage of cases where there is a recurrence. Recently Dr. Myer Solis Cohen, of Philadelphia, who has been one of the visiting physicians since the hospital's inception, was elected children's physician and will have complete charge of the new children's shack.

Small-Pox Epidemics.—Director E. R. Walters of the Pittsburgh Department of Public Health, issued an order August 16 that all the residents, more than 30,000 persons, in the upper end of the old Lawrenceville district, a suburb of Pittsburgh, be vaccinated. This measure is taken to prevent the further spread of small-pox raging in that district, and arrangements have been made for the erection of a building on the old West Penn Hospital grounds for a detention house. The city has allowed Dr. Walters an appropriation for additional city physicians. Up to August 22, Carbondale had 22 cases of small-pox and a number of suspects, which are being watched. Assistant State Health Commissioner C. J. Hunt, Harrisburg, has gone to Carbondale and Mayor Murrin has issued an order for compulsory vaccination and has approved the order of the board of health closing all schools, churches, theaters and amusement places.

Outbreak of Typhoid in Chester Valley.—Investigation of the outbreak of typhoid fever in the Chester Valley shows the source of the epidemic to have been the contaminated milk of one dairy farm at William's Corner, a suburb of Phoenixville. There are about 25 cases scattered about the little settlements of the valley and nearly half of the patients are Italians residing at Devault, Cedar Hollow and Howelville. In the household of the milk dealer, there are three typhoid patients. Under the direction of Dr. Joseph Scattergood, county health physician, West Chester, the cows on this farm have been removed to other quarters and the barn, house and milk-house thoroughly cleaned and disinfected. The sanitary engineer of the Springfield Water Company, whose pumping station near Phoenixville supplies the towns along the main line east of Glenloch, has been supervising carefully the work of protecting the water-supply of the many towns, and bacteriologic tests of the water-supply made daily show it free of all impurities when forced into the pipe lines.

Philadelphia

Measles on German Ship.—The North German Lloyd Steamship *Brandenburg*, which docked August 21, had an outbreak of measles in the steerage. Five children, their mothers and a man, who became ill after the ship left Bremen, were immediately isolated, so that the ship was not held in quarantine here.

Personal.—Dr. Harry Lowenberg has been elected assistant professor of infantile dietetics in the Medico-Chirurgical College.——Drs. Edna S. Valentine and Aaron Barlow have been appointed assistant bacteriologists in the bureau of health.——Dr. Ralph F. Sommerkamp, who has been ill at his home in Arlington since February, is reported still to be seriously ill.

New Hospital for University.—Plans are now being made for the hospital of the University of Pennsylvania, which include an entire set of new buildings, occupying the land bounded by Thirty-Fourth and Spruce Streets, Hamilton Walk and the dormitory group now occupied by the present hospital. These buildings when completed will represent an outlay for construction alone of $1,000,000, and the first step will be the erection of a surgical building to cost about $300,000, one-half of which has already been appropriated by the state. This building will occupy a plot 89x94 feet, will be in the Elizabethan style of architecture, a seven-story structure, having five floors above the street level in addition to a basement and ground floor. The foundation will permit three additional stories to be added later. On the ground floor will be the *x*-ray department, the first three floors will contain surgical wards, while the remaining wards will be devoted to operating amphitheaters, laboratories, etherizing rooms and recovery wards.

GENERAL

Railway Surgeons to Meet.—The twenty-second annual session of the New York and New England Association of Railway Surgeons will be held at the Hotel Astor, New York City, November 13.

Electrotherapeutists to Hold Meeting.—The twenty-second annual meeting of the American Electro-Therapeutic Association will be held in Richmond, Va., September 3-5, under the presidency of Dr. William D. McFee, Haverhill, Mass.

Appropriation Asked for McClintic's Widow.—In recognition of the heroism of the late Dr. T. B. McClintic, U. S. P. H. Service, Senator Myers, of Montana, has introduced a bill to pay $5,760, the amount equivalent to two years' salary, to the widow of Dr. McClintic.

Military Surgeons Meet in Baltimore.—The annual meeting of the Association of Military Surgeons of the United States will be held in Baltimore, October 1-5, under the presidency of Surgeon Charles P. Wertenbaker, U. S. P. H. Service. Among the features of the entertainment provided are a trip to Annapolis, to the Naval Academy and a reception by the governor of the state.

Meeting of Fraternal Society Surgeons.—At the annual meeting of the medical section of the Associated Fraternities of America held in St. Paul, August 19, the following officers were elected: president, Dr. P. A. Quick, Muskegon, Mich.; vice-president, Dr. Charles P. Brown, Omaha, and secretary, Dr. M. M. Smith, Dallas, Tex. (reelected).

Correction of the Educational Number.—In THE JOURNAL, last week, page 650, second column, lines four and five, referring to students enrolled during 1911-12, read: "The eclectic colleges show a decrease of sixty-three below 1911 and forty-seven below 1910." As shown by the figures in Table 4, which are correct, the above lines should read: "The eclectic colleges show a decrease of 125 below 1911 and 147 below 1910."

Ruling Regarding Lepers.—The solicitor of the treasury department, at the request of Surgeon General Rupert Blue, U. S. P. H. Service, has rendered an opinion in the case of Sam Isen, the leper who escaped from Bay City, Mich., and was under surveillance in Buffalo for several weeks, that as he was a citizen neither of Bay City nor Buffalo it remains

for the authorities who have him in charge to care for him. As noted elsewhere in this issue, this leper was released by the health commission of Buffalo, and his present location is unknown.

Wish to Stop Sending Consumptives to Southwest.—In order to discourage the sending of individuals in the advanced stages of tuberculosis to the Southwest, physicians in the Eastern and Southern states are to be asked by the National Association for the Study and Prevention of Tuberculosis to stop this practice. The association admits that not less than 10 per cent. of the six million inhabitants of Colorado, New Mexico, Arizona, Southern California and Western Texas have tuberculosis or have come to the Southwest because of tuberculosis in the family.

Prevention of Malaria.—The Southern Medical Association has appointed a special commission consisting of Captain Charles F. Craig, M. C., U. S. Army, chairman, Dr. Graham E. Henson, Crescent City, Fla., secretary, and Drs. R. H. von Ezdorf, U. S. P. H. Service, Mobile, William Kraus, Memphis, Tenn., Creighton Wellman, New Orleans, William H. Deaderick, Marianna, Ark., W. S. Thayer, Baltimore, Seale Harris, Mobile, and C. C. Bass, New Orleans. The commission will tabulate information from the entire South on malaria and diseases simulating malaria and will decide on what means will be used for the elimination of this condition.

Railway Hospitals Turned Over to Employees.—The management of the entire hospital service of the Missouri Pacific-Iron Mountain System has been turned over to the employees of these companies. The management is vested in a board of nine hospital service managers of which the chief surgeon of the road is *ex-officio* chairman. The remaining members of the board are chosen, one each, from the following departments: train, engine and yard service, shops, roundhouse and repair yards; maintenance of way and structures; telegraphers, office and station employees; operating department; law department; accounting department; and one member as yet unassigned.

Railroad Rates for Hygiene Congress.—For the International Congress on Hygiene and Demography to be held in Washington, September 23 to 28, the railroads have announced a one and a half first class limited fare on the certificate plan, with a minimum of $2 for the round trip, tickets good going September 21, 22 and 23; returning, to reach the starting point, October 1. This rate applies to the railroads composing the Trunk Line Association, which includes most of the Eastern roads; and the roads belonging to the New England Passenger Association. Special rates have been made by the Southwestern, the Southeastern and the Transcontinental Passenger Associations. No special concessions have been made by the Central Passenger Association. The Western Passenger Association suggests that delegates purchase summer tourists' tickets to Eastern points which are good returning October 31.

European Members of American Tour.—Last week THE JOURNAL gave the itinerary of the party which is to make a medical study trip to America in connection with the International Congress on Hygiene and Demography. Following is a list of the members of the party:

GERMANY

From Berlin: Geh. Medizinalrat Prof. His, President of the Central Committee for Medical Study Trips; Sanitätsrat Dr. Oliven, General Secretary of the Central Committee, and Frau; Prof. Lennhoff, Division Chairman of the Central Committee; Dr. Bentscher; Sanitätsrat Dr. Braun; Geh. Medizinalrat Prof. Brieger and Frau; Dr. Konrad Cohn; Prof. Dieck; Dr. Ekstein; Prof. Flatau and Frau; Dr. Fleischer; Stabsarzt Dr. Fornet and Frau; Oberstabsarzt Dr. Hamann; Dr. Hermann; Generaloberarzt Dr. Hoffmann and Frau; Dr. Ad. Jacob; Dr. Jacobsohn; Sanitätsrat Dr. Kronthal; Mangold; Dr. Meissner; Sanitätsrat Dr. George Müller and Frau; Dr. Müllerheim; Müller-Vanden Plas; Sanitätsrat Dr. Oestereicher and Frau; Dr. Pfaehler; Dr. Plonski and Frau; Dr. Pongs; Dr. Röhr and Frau; Sanitätsrat Dr. Sand; Dr. Sandecker; Dr. Schönwald; Dr. Schwarz and Frau; Herr Sembdner; Dr. Silberstein and Frau; Sanitätsrat Dr. Steinthal; Frau Dr. Stelzner; Prof. Strauss and Frau; Dr. Ullstein; Geh. Regierungsrat Dr. Weber; Oberstabsarzt Dr. Weber; Dr. Wegener; Dr. Weidemann, Frau and Fräulein.

From Charlottenburg-Berlin: Dr. Arth. Fränkel and Frau; Prof. Heller; Dr. E. M. Simons.

From Dahlem-Berlin: Dr. Baumgarten and Frau.

From Friedenau-Berlin: Dr. Engel; Herr Engel; Dr. Rosenberg.

From Grünewald-Berlin: Prof. Schreiber.

From Lichtenberg-Berlin: Dr. Seelig.

From Neukölln-Berlin: Fräulein Dr. Ethel Blum.

From Rummelsburg-Berlin: Dr. Heidenfeld.

From Schlachtensee-Berlin: Dr. Kalischer.

From Steglitz-Berlin: Dr. T. Mayer.

From Arnsberg: Regierungs- u. Medizinalrat Dr. Schneider.

From Bochum: Sanitätsrat Dr. Lindemann.

From Bonn: Dr. Brockhoff; Privatdozent Dr. Zurhelle; Dr. Zurhelle.

From Bamberg: Dr. Reichert; Dr. Seeber.

From Brandenburg: Dr. Kroner.

From Braunschweig: Geh. Medizinalrat Dr. Engelbrecht.

From Breslau: Herr Ehrlich and Frau; Dr. Loebinger; Medizinalrat Dr. Martini; Sanitätsrat Dr. Moeser; Dr. Oppler and Frau; Geh. Med. Prof. Partsch; Herr von Schoenfeldt; Dr. Veith and Frau; Dr. Winkler.

From Camberg-Nassau: Dr. Fluck.

From Coblenz: Dr. Bodenbach; Sanitätsrat Dr. Heigl.

From Cologne: Prof. Pröbsting; Herr Jos. P. Tonger.

From Danzig: Privatdozent Dr. Decker; Herr Fleischer; Dr. Sober; Herr Steinbrück.

From Dessau: Sanitätsrat Dr. Klauder.

From Dortmund: Dr. Neuschmidt.

From Dresden: Dr. Dufeldt; Stadtrat Koeppen; Dr. Fritz Kruger; Dr. Weber; Dr. Würkert; Hofrat Dr. Zucker.

From Düsseldorf: Prof. Hoffmann, Frau and Fräulein; Dr. Thom.

From Erlangen: Prof. Graser; Oberstabsarzt Dr. Hauenschild and Frau.

From Essen-Ruhr: Dr. Hauptmeyer; Dr. Hirschmeyer.

From Frankfort: Dr. Auerbach and Dr. Cahen-Brach.

From Giessen: Geh. Med. Dr. Vossius.

From Görlitz: Sanitätsrat Dr. Menzel.

From Grimma: Dr. Kindt.

From Halle/S.: Dr. Fielitz.

From Hamburg: Dr. Franke and Frau; Dr. Jaffé and Frau; Oberarzt Dr. Mond and Frau; Prof. Pfeiffer; Dr. Rauert; Dr. Thost and Frau.

From Hannover: Dr. Billeb and Frau; Dr. Plönies; Dr. Peters and Frau.

From Heidelberg: Dr. Caan.

From Insterburg: Sanitätsrat Dr. Sinnecker and Frau.

From Jena: Geh. Hof. Prof. Gaertner.

From Kolberg: Geh. Med. Dr. Behrend and Oberstabsarzt Dr. Glatzel.

From Karlsruhe: Dr. Buchmüller; Dr. Levinger.

From Kiel: Prof. Müller, Reiner.

From Kiel-Wik: Generaloberarzt Dr. Richelot.

From Kl. Dexen: Herr Hoehne.

From Königsberg: Dr. Bongers; Dr. Dobbelin; Sanitätsrat Dr. Ebel and Frau; Medizinalrat Dr. Fortstreuter; Prof. Hoeftman; Dr. Lehmann.

From Landsberg/W.: Geh. Med. Dr. Friedrich.

From Lechhausen: Dr. Heidmann.

From Leipsic: Sanitätsrat Dr. Carstens; Dr. Kähne; Dr. Mechler and Frau; Frau Herbst-Mechler; Dr. Nauenburg; Hofrat Prof. Pfaff; Sanitätsrat Dr. Schwabe and Frau; Dr. Unger and Frau.

From Lemberg: Dr. Sandauer.

From Ludwigshafen/R.: Hofrat Dr. Rembe.

From Magdeburg: Sanitätsrat Dr. Braune; Frau Ebering; Dr. Therig and Frau.

From Mannheim: Dr. Nerlinger.

From Munich: Hofrat Dr. Brunner; Ministerialrat Prof. Dieudonné; Dr. Fordan; Dr. Galli; Prof. Gebele and Frau; Hofrat Dr. Werner; Ministerialrat Dr. Zahn and Frau.

From Neisse: Dr. Bernatzky; Dr. Jaeckel.

From Nürnberg: Dr. Merkel and Frau.

From Pforzheim: Dr. F. Müller.

From Ragnit: Dr. Rubinski.

From Schwetzingen: Medizinalrat Dr. Henrici.

From Senftenberg: Sanitätsrat Dr. Reinach.

From Stettin: Dr. Kirstein.

From Bollinken-Stettin: Sanitätsrat Dr. Steinbrück and Fräulein.

From Stuttgart: Dr. Brigel; Dr. Kiefe; Dr. Krauss; Dr. Reif; Dr. Stern.

From Swinemünde: Dr. Schiemann.

From Tichau: Dr. Weissenberg.

From Villingen-Baden: Dr. K. Mayer.

From Weimar: Geh. Hof. u. Geh. Med. Dr. Pfeiffer.

From Wismar: Dr. Allerhand; Medizinalrat Dr. Unruh.

From Wittenberge: Dr. Hilfer.

AUSTRIA-HUNGARY

From Arad: Dr. Barra.

From Graslitz (Boh.): Dr. Lein.

From Graz: Dr. Pollak.

From Karlsbad: Dr. Samisch and Frau.

From Nagyvarad (Hungary): Dr. Barkovits and Frau.

From Salzburg: Sanitätsrat Dr. Adler; Dr. Kraft.

From Spalato: Dr. Staloi Ivo.

From Vienna: Prof. Hirschl; Privatdocent Dr. I. Kohn; Prof. Schattenfroh; Dr. Winternitz; Privatdocent Dr. von Wunschheim.

HOLLAND

From Amsterdam: Privatdocent Dr. Boumann and Frau.

From Breda: Dr. Romeyn.

ITALY

From Bordighera: Prof. Galli.

From Rome: Dr. Bretschneider and Frau.

RUSSIA

From Lowicz: Herr Bursche.

From Moscow: Dr. Summet.

From Riga: Dr. Blechmann, Frau and Fräulein.

From Warsaw: Dr. Dobrzynski; Herr Groschke and Frau; Dr. Bursche.

From Zgierz: Dr. Haessner.

SPAIN

From Lisbon: Prof. de Gama Pinto and Frau.

SWITZERLAND

From Bonfol: Dr. Gerber.
From Bern: Dr. Walthard.
From Solothurn: Dr. Pfaehler.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, August 17, 1912.

Bathing Habits

At the Royal Sanitary Congress held at York, Dr. Quine of Manchester read a paper on the degree of personal cleanliness among different classes of people, the result of elaborate inquiry. Among 40,000,000 of our people, he said, the basin was the only washing vessel. "We English people are not nearly so clean as we are supposed to be." The bath was not nearly so popular as was supposed. In some hotels not more than 1 per cent. of the guests use the bath on any day; in others the percentage was stated to be as high as ten. Cold baths were used almost exclusively by men. The order of frequency in which the different classes of persons took baths was also very interesting. Those who had the daily bath habit seemed to belong principally to the type of public school men, and were mostly the young and early middle aged. As years increased the daily bath habit seemed to decline. Military men came first, with racing men a good second. No evidence was discovered which would lead one to conclude that bathing accommodations were unduly taxed whenever a congress of medical men or sanitarians was held in any town. Nor was there sufficient evidence forthcoming to form any general opinion as to the bathing habits of the clergy; their average did not seem to be high. But no doubt the cost would, in their case, be an important factor. Other professional men were difficult to distinguish. Commercial men did not appear to have acquired the habit of the daily bath. In nationalities the following appeared to be the order of frequency of bathing: Scotchmen, Englishmen, Irishmen, American women, English women, American men, Frenchmen, Germans. It seemed to be agreed that American women were less bashful than English women, and were not afraid to pass along corridors to the bathroom, while English women had very strong objections to doing so, and that this accounted for the fact that American women made greater use of the bathroom. The latter were also apparently better provided with elaborate dressing-gowns than were the English women. He found no evidence that the comparative infrequency of bathing by American men was due to bashfulness. The sanitary reform which was most urgently required in this country was increased facilities for personal and domestic cleanliness in the homes of the people by improved appliances.

The Healthiest Country in the World

According to Mr. G. H. Knibbs, commonwealth statistician, Australia is the healthiest country in the world, with the exception of New Zealand, which is a trifle healthier. In Australia, the death-rate has fallen from 15.75 per 1,000 in 1884 continually to the present rate of 10.5. Only one other country in the world can show a better rate, New Zealand, where it is 9.75. Infant mortality has shown a still more striking fall. In 1880 there were 130 deaths per 1,000 births, now the number is only seventy-one.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, August 9, 1912.

Overcrowding of the Medical Profession and the Number of Medical Students

Official statistics this year show a diminution of the total number of medical students in France. There are now 8,688 instead of 8,779 as last year. The number of foreign students, however, continues to increase; there are now 1,301, while in 1911 there were 1,289. The diminution of French medical students should be considered as a blessing for the overcrowded medical profession. Unfortunately, it seems improbable that this diminution will continue, since the number of students enrolled for the P. C. N. (certificate of physics, chemistry and natural sciences) was 1,776 this year against 1,583 in 1911. Some physicians complain of the increasing number of foreign students, in whom they see future competitors, but, as the *Semaine Médicale* remarks, statistics prove that the great majority of foreign students come to France only to obtain medical instruction without the intention of obtaining the government doctorate, which gives the right to practice. Few are enrolled even for the university doctorate.

Of the 1,301 foreign medical students in France there are 849 from Russia, eighty-seven from Turkey, sixty-four from Bulgaria, fifty-seven from Roumania, twenty-six from Greece, twenty-five from South America, ten from Central America and four from the United States.

Honor to Dr. Magnan

Dr. Valentin Magnan, physician-in-chief at the Sainte-Anne Asylum, has just retired. In honor of the great alienist the city of Paris has decided to name after him the pavilion—Pavillon Magnan—of which he has been director since 1867.

Dr. Pozzi's Mission in South America

Professor Pozzi, who for two years was in charge of scientific expeditions in Argentine and Brazil, has returned to South America. Under the direction of the minister of public instruction, he will make a study of medical instruction and the instalment of the hospitals in Rio de Janeiro, Buenos Aires and Santiago, Chile.

The Third International Congress of Deaf-Mutes

This congress, held in Paris, August 1 to 3, brought together more than 600 deaf-mutes from all parts of the world. Its sessions coincided with the festivities held at Paris and Versailles in honor of the bicentenary of the birth of the Abbé de l'Epée, the founder of the Institution nationale des sourds-muets, who taught deaf-mutes to make themselves understood by means of a language of conventional signs. The members of the congress, whose speeches were translated alternately by signs and by words, took up the subjects of professional instruction, instruction in arts and higher instruction of the social situation of deaf-mutes, their admission into liberal and artistic careers, questions of insurance, etc. The question which occupied the greater part of the session and aroused the most interest related to the kind of instruction that should be given to deaf-mutes. Most teachers of deaf-mutes in France and foreign countries are in favor of the vocal method. Curiously, most of the deaf-mutes are hostile to this form of instruction, although it renders their relations with those who speak and hear easier. They are in favor of a mixed system consisting of words for communicating with normal persons, and conventional signs for conversation among deaf-mutes.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Aug. 10, 1912.

Personal

Wundt, the distinguished professor of psychology at Leipsic, celebrated his eightieth birthday, August 16. The noted scientist was educated as a physician and at the beginning of his career was privat docent in physiology at Heidelberg. On account of his studies in the application of physiologic methods to psychologic problems Wundt was called to Zurich as professor of philosophy in 1874. He did pioneer work in psychiatry in the development of experimental psychology. His work in the principles of psychology, logic, ethics, popular psychology, etc., is well known.

Professor Everbusch, director of the Munich university eye clinic, died, August 7, at the age of 59, a short time after an attack of apoplexy. He was a pupil of his predecessor, Professor Rothmund. In 1882 he joined the faculty of Munich, was called to Erlangen in 1886 as regular professor, and returned to Munich in 1900 as director of the eye clinic. Among his numerous literary efforts may be mentioned especially his monograph dealing with the relations of the diseases of the nose and of the ear to those of the eye, which was published in the large "Handbuch der gesamten Augenheilkunde" by Graefe-Saemisch, and the treatment of the eye in the well-known "Handbook of Therapy" by Penzoldt and Stinzing. His last work would have been a revision of his contribution to the "Handbuch der Therapeutischen Technik," edited by J. Schwalbe. Everbusch was highly esteemed both as a physician and as a teacher.

Prof. A. Rosenberg, who was for many years the assistant of Prof. Bernard Fraenkel, died, July 31, at the age of 56, only six months after his teacher. He received general recognition as secretary to the International Congress of Laryngology held last year in Berlin. His literary services were chiefly in the field of therapeutics.

August 3, Professor Bernstein, formerly director of the Institute of Physiology at Halle, celebrated the fiftieth anniversary of his doctorate.

August 9, Honorary Professor Dr. Gustav Fritsch of Berlin celebrated the golden anniversary of his doctorate. Fritsch has rendered great service in the fields of histology and anthropology. In 1887 he was appointed director of the department of microscopic biology in the newly erected institute of physiology under DuBois Reymond. Of especial importance were his investigations early in the seventies in conjunction with Hitzig on the localization of the motor centers in the cerebral cortex. His studies of the brain of the fish, by which further evidence was afforded of the analogous structure of the central nervous system of all vertebrates, are well known, as are his studies on electrical fishes. His work on the form of man for artists and anthropologists is of general interest. A short time ago he delivered an address in the anthropologic society on the racial characters of human hair, illustrated by numerous microscopic preparations, in which he is a master.

Professor Matthes, who had received an appointment as successor of Lichtheim, has unexpectedly decided to remain in Marburg. So far nothing definite is known as to the reasons for this surprising declination.

Foundation of German Hospital in Hongkong

According to the newspapers an American woman has left in her will to two German physicians practicing in Hongkong the sum of $62,500 (250,000 marks) for the erection of a German hospital.

Vision Tests for Chauffeurs

At the request of the Bavarian Automobile Club, the Munich Ophthalmologic Society has given an expert opinion as to the power of vision to be required of an automobile driver, of which the following are the principal points: 1. For the central acuity of vision in the better seeing eye a power equal to two-thirds the normal, and in the weaker eye a power equal to one-third the normal should be required, and this should hold good for all drivers whether the visual power is attained with or without glasses. Glasses for correction may be worn but must not be stronger than eight diopters. Reserve glasses are necessary and also the driver who wears glasses should be provided with a wind shield when rain or snow is falling and this should have a window that can be opened. 2. At the time of application for license as chauffeur an examination of the field of vision with the perimeter should be made and a plainly recognizable contraction of the field of vision in one eye should exclude the applicant from securing a license. 3. In the same way a noticeable diminution of sensibility to light should prevent him from obtaining a license. 4. Congenital color blindness is of no moment for guiding an automobile. 5. The following diseases of the eye shall exclude the applicant from license: ptosis, paralysis of the eye muscles, notable disturbance of the mobility of the pupil, aphakia and, exceptionally, external inflammations. 6. The wearing of protective spectacles, preferably of glass, is to be recommended.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Aug. 10, 1912.

Death of Professor von Neusser

By the death of Professor von Neusser, which took place a few days ago, the Vienna Medical School and University sustains a severe loss. This physician was one of those few men whose genius at once attracts the attention of his contemporaries. He was born in Poland. After his graduation, when assistant in one of the medical wards in the old General Hospital in Vienna, he used to make incredibly correct diagnoses which amazed his confrères as well as the pathologists. When he was appointed as Kahler's successor, the majority of the faculty were rather opposed to him, for he had not belonged to the clique which was even then omnipotent in the University of Vienna; but the students were and always remained in sympathy with the new professor. He was a most remarkable teacher, demanding from his pupils much knowledge, and giving them wonderful insight into the actual conditions of illness and the diseased human body. He was a special worker and investigator in the problems of hematology, pellagra and disturbances of circulation and of the respiratory and alimentary organs, while lately his clinic paid special attention to diseases of metabolism and of the "internal secretion" of glands. His lectures were generally thronged by students, and numerous American physicians were regular listeners to his talks on differential diagnosis. About a year ago he had to undergo an operation for what was thought to be hydronephrosis but which was an inoperable cancer of the kidney, the diagnosis of which he had made on himself before the surgeon could verify it *in vivo*. His friends tried to hide the truth from him, and in this they succeeded; at least he never asked after the operation what was the true nature of his sufferings. He reached only the age of 60 years, at which time he had been clinical professor in Vienna for twenty years. At present his former assistant, Professor Türck, has been asked to take charge of the clinic temporarily until its fate is decided. It is not impossible that the three other medical clinics (Noorden, Ortner and Chvostek) will divide up among themselves the wards of Neusser's clinic, while space will be gained thus for a third (new) surgical clinic, intended to serve as a propedeutic clinic for students of surgery.

A Case of Small-Pox in Vienna

As the result of compulsory vaccination in this country, small-pox has become so rare in Vienna that a single case attracts general attention. The majority of our younger physicians have never seen a case; when five years ago a small epidemic occurred in Vienna—altogether sixty-two cases—this formed the only opportunity they have had since 1866 to study the disease in our city. Now another case has been reported, and it could be proved that the patient had brought the disease from Constantinople, where he had been on business within the last week before his illness. All the necessary precautions have been taken to prevent further spreading of the disease. The course of illness was very mild; the patient had been vaccinated when a boy of 7 years, to which fact the slight degree of the attack is to be attributed.

Cholera Appears Again in Austria-Hungary

A fresh case of cholera has been reported in Hungary, in the same district (near the Austrian frontier and in close business relations with Vienna) where it had raged last winter and where it had been pronounced extinct. Last year our board of health was successful in warding off the dreaded disease from our own country. The cool summer of this year —the coolest on record since 1775, and showing the highest amount of rainfall for July and half of August—is very favorable for an eventual explosive appearance; therefore the population has been warned to be on the lookout.

Marriages

FREDERICK VAILE OVERMAN, M.D., Indianapolis, Ind., to Miss Elizabeth Lee, of Lafayette, Ind., August 9.

EUGENE T. HANCOCK, M.D., Philadelphia, to Miss Lelia J. Hornsby, of Harborton, Va., August 9.

ALFRED S. MASCHKE, M.D., Cleveland, O., to Miss Selma Klein, of Lorain, Ohio, August 11.

ISAAC JOHN KING GOLDEN, M.D., to Miss Annette Elizabeth Green, both of Chicago, July 25.

WILLIAM M. CAMPBELL, M.D., to Miss Natalie Clark, both of St. Joseph, Mo., August 10.

RICHARD BEASON SHORT, M.D., Bedford, Ind., to Miss Edna Comley of Indianapolis, July.

JAMES MINES GODFREY, M.D., to Miss Kate Weaver, both of Philadelphia, August 15.

JOHN M. BECK, M.D., to Miss Laura B. Best, both of Louisville, Ky., August 15.

Deaths

Frederick F. Hoyer, M.D. University of Buffalo, N. Y., 1849; said to have been the oldest practitioner in New York City; a member of the Medical Society of the State of New York; president of the Erie County Medical Society in 1880 and made an honorary member in 1908; physician to the Erie County Insane Asylum and Alms House from 1861 to 1863; died at his home in Tonawanda, August 16, from heart disease, aged 90. The honorary pallbearers at his funeral were physicians of Erie County.

Frances Augusta Scranton Tenny, M.D. University of Michigan, Ann Arbor, 1877; a nurse during the Civil War; a member of the Kalamazoo Academy of Medicine; died in the Bronson Hospital, Kalamazoo, August 11, from senile debility, aged 82.

Andrew J. Brockett, M.D. University of Michigan, Ann Arbor, 1862; formerly a member of the American Medical Association; assistant surgeon of the First and Forty-Fourth Ohio Volunteer Infantry throughout the Civil War; for thirty years a practitioner of Bristol, Ohio, but later a resident of Cleveland; died at his home, August 12, from cerebral hemorrhage, aged 76.

Irving Ellis Kimball, M.D. Medical School of Maine, Brunswick, 1876; a member of the American Medical Association and American Laryngological, Rhinological and Otological Society; consulting surgeon on diseases of the nose and throat to the Maine General Hospital and Maine Eye and Ear Infirmary, Portland; died recently at his home in that city, aged 60.

George Washington Simpson, M.D. College of Physicians and Surgeons, Baltimore, 1873; a member of the American Medical Association; for twenty years a chaplain in the U. S. Army, and for the last fifteen years in charge of the religious and medical work at the Johns Hopkins Colored Asylum; died at his home in Baltimore, August 18, from heart disease, aged 71.

McCandlish Monroe Moran, M.D. University College of Medicine, Richmond, 1901; formerly a member of the American Medical Association; member of the Medical Society of Virginia; of Pinners Point; formerly surgeon for the Atlantic Coast Line System; was found dead in his room in the Neddo Hotel, August 12, it is supposed, from heart disease, aged 38.

Thaddeus Lindley Robertson, M.D. Jefferson Medical College, 1861; a surgeon with Hill's brigade of cavalry in the Confederate service throughout the Civil War; for thirty years a member of the Medical Association of the State of Alabama; one of the first members of the State Board of Medical Examiners; died at his home in Birmingham, August 16, aged 76.

Edward G. Stemmetz, M.D. Long Island College Hospital, Brooklyn, N. Y., 1867; formerly a member of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; for several years a member of the Board of Education of Hokendauqua, Pa.; died at his home, August 12, from phlebitis, aged 68.

William I. Cowie, M.D. McGill University, Montreal, Que., 1895; a member of the Piscataquis County (Me.) Medical Society; for several years a surgeon on transatlantic steamers, but later a practitioner of Guilford; died in a hospital, Bangor, August 4, six weeks after an operation for appendicitis, aged 43.

Daniel Gardener Mason, M.D. New York University, New York City, 1879; formerly president of the Monroe County (N. Y.) Medical Society and a charter member of the Rochester Academy of Medicine; died at his home in East Henrietta, N. Y., August 12, from septicemia, aged 57.

Edward B. Root, M.D. Albany (N. Y.) Medical College, 1856; surgeon of the One-Hundred and Sixty-Eighth New York Volunteer Infantry during the Civil War; for nearly fifty years a practitioner of Painesville, Ohio; died in the Painesville Hospital, August 9, aged 80.

L. Alonzo Glaze, M.D. Vanderbilt University, Nashville, Tenn., 1881; University of Nashville, 1882; local surgeon of the Illinois Central and Big Four systems at Grayville, Ill.; died in an infirmary in St. Louis, August 11, from carcinoma of the liver, aged 54.

Isaac Hull Platt, M.D. Long Island College Hospital, Brooklyn, N. Y., 1882; for several years a practitioner of Brooklyn and later of Lakewood, N. J.; a grandson of Commodore Hull; eminent as a Baconian; died at his home in Wallingford, Pa., August 14, aged 59.

August Rauscher, M.D. University of Vienna, Austria, 1855; a member of the American Medical Association; an expert mineralologist, but since 1882 an active practitioner of Murray, Utah; died at his home in South Cottonwood, August 15, aged 79.

Abram B. Williams, M.D. Jefferson Medical College, 1863; a member of the Missouri State Medical Association; a specialist on diseases of the eye and ear, in St. Louis for many years; died at his home in Bedford, Ind., August 6, aged 77.

William Gray Miller, M.D. Western Pennsylvania Medical College, Pittsburgh, 1898; surgeon of volunteers during the Spanish-American War, with the rank of major; died at his home in New Castle, Pa., August 16, from uremia, aged 38.

George H. Vaupell, M.D. Rush Medical College, 1896; Chicago Homeopathic Medical College, 1897; of Chicago; died suddenly at Antioch, Ill., August 19, from cerebral hemorrhage, aged 53.

William Douglas Thomason, M.D. University of Alabama, Mobile, 1898; a practitioner since 1890; died at his home in Toulminville, Ala., August 13.

John Lark Stockdale, M.D. Medical College of the State of South Carolina, Charleston, 1855; a member of the Medical Association of the State of Alabama; a Confederate veteran; died in Talladega, August 11, as the result of a fall, aged 81.

C. Annette Buckel, M.D. Women's Medical College of Pennsylvania, Philadelphia, 1858; known as "The Little Major" on account of her service in hospitals during the Civil War; died at her home in Piedmont, Cal., August 17, aged 78.

James Thomas Eason, M.D. Tulane University, New Orleans, 1897; a member of the board of health of Grand Lake, Ark., and a member of the Chicot County Medical Society; died at his home August 9, from malaria, aged 47.

William Clarke, M.D. Detroit Medical College, 1871; College of Physicians and Surgeons, New York City, 1877; for many years a practitioner of Lamont and Grand Rapids, Mich.; died in Lincoln, Neb., August 12, aged 68.

Franklin Richard Garlock, M.D. University of Pennsylvania, Philadelphia, 1870; a member of the State Medical Society of Wisconsin, and a veteran of the Civil War; died at his home in Racine, August 13, aged 71.

Pardon Leland Kimball, M.D. University of Buffalo, N. Y., 1880; a veteran of the Civil War; formerly a practitioner of Illinois and Iowa; died at his home in Long Beach, Cal., recently, aged 71.

William Giddings Peterson, M.D. Vanderbilt University, Nashville, Tenn., 1894; president of the school board of Port Lavaca, Tex.; died at his home, August 10, from typhoid fever, aged 39.

Alvin T. Heavenrich, M.D. Miami Medical College, Cincinnati, 1904; a member of the American Medical Association and a practitioner of Seattle, Wash.; died in Cincinnati, July 31, aged 29.

Frank T. Cochran, M.D. Jefferson Medical College, 1872; formerly coroner of Columbia County, and health officer of Hudson, N. Y.; died at his home in Hudson, July 18, aged 50.

J. Howard Beck, M.D. University of Pennsylvania, Philadelphia, 1882; a member of the American Medical Association; died at his home in Philadelphia, August 15, aged 59.

John Keck, M.D. Homeopathic Medical College of Missouri, St. Louis, 1869; died at his home in Camp Meeker, Cal., recently, aged 71.

Charles Richards, M.D. University of Buffalo, N. Y., 1904; died suddenly at his home in Sturgis, S. Dak., August 4, from nephritis, aged 40.

Daniel Meagher, M.D. Queens University, Kingston, Ont., 1867; of Montreal; died in Kingston, August 10, from heart disease, aged 68.

John Frederick Hilton, M.D. University of Vermont, Burlington, 1892; died at his home in Phillips, Me., August 1, aged about 45.

Luigi S. Jadarola, (license, California, 1894); a practitioner for twenty-eight years; died recently at his home in San Francisco.

Henry Jackson, (license, Board of Examiners Eclectic Medical Society of California, 1846); died recently at his home in Likely,

David Smith Humphreys, M.D. Tulane University, New Orleans, 1885; died at his home in Greenwood, Miss., July 20, aged 51.

Thomas Adams, M.D. Trinity Medical College, Toronto, Ont., 1901; of Columbus, Ohio; died in Denver, August 7, aged 35.

Richard M. Fulkerson, M.D. Eclectic Medical Institute, Cincinnati, 1870; died at his home in Mounds, Ill., August 11, aged 73.

Frederick C. Boyd, M.D. Queens University, Kingston, Ont., 1911; died at his home in Kingston, July 5, from tuberculosis, aged 23.

James Peterson McInerney, M.D. McGill University, Montreal, Que., 1884; died at his home in St. John, N. B., August 8.

Rawley E. Ice, (license, West Virginia, 1881); of Logansport, died August 12, a few hours after a surgical operation.

Ezbon Churchill, M.D. University of Vermont, Burlington, 1872; died at his home in Woodstock, N. B., August 8.

Hugh Walker, M.D. Queens University, Kingston, Ont., 1897; died recently at his home in Elsinore, Cal., aged 39.

Luis Fatjo, M.D. University of Barcelona, Spain, 1888; died recently at his home in Volta, Cal.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

VIBURNUM COMPOUND—AND OTHER NOSTRUMS

A number of drugs have some reputation for therapeutic value without there being any particular evidence to substantiate the claims. Viburnum, concerning which we recently received the following letter, is one of these drugs:

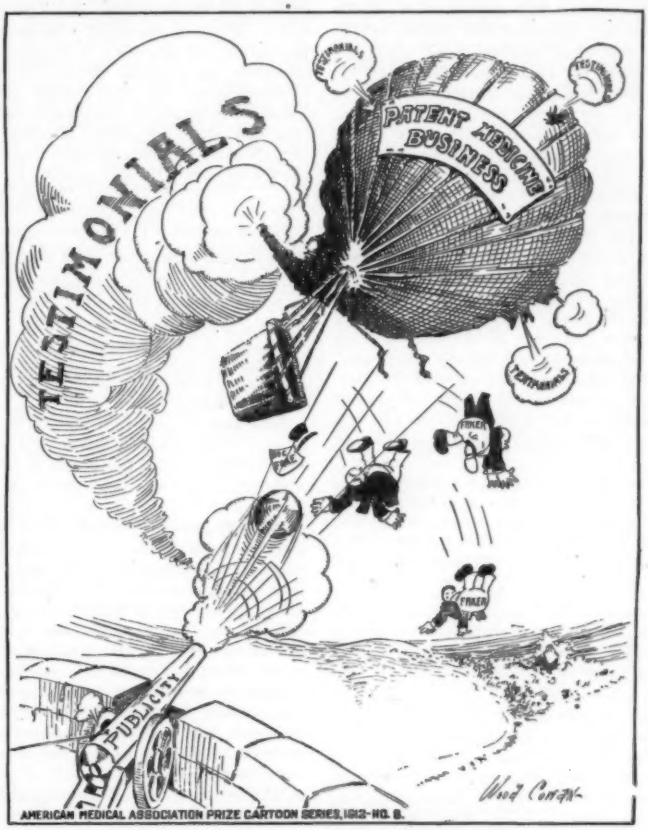
To the Editor:—Have you made an analysis of Viburnum Compound? Extravagant claims are being made for it and I cannot put my hand on any data. A patient has asked me concerning it and I wish to advise her honestly. I do not know but that there may be several "viburnum compounds." I rarely use any of these "p u t - u p" preparations, and hence know but little about them.

A. J. HESSER, M.D.,
Pittsburgh, Pa.

No analysis of Hayden's Viburnum Compound, to which our correspondent refers, has been made in the Association laboratory. According to advertising circulars, the preparation contains American skullcap (*Scutellaria lateriflora*), cramp-bark (*Viburnum opulus*) and wild yam (*Dioscorea villosa*). Since these drugs contain no well-defined therapeutically active ingredients, an analysis of the preparation would necessarily be unsatisfactory.

There are a number of drugs which have in some way obtained a reputation as being valuable in the treatment of diseases of women, without their therapeutic claims ever having been proved. It is said that some were used by the aborigines for such affections and we find a considerable number of them combined in various nostrums (sometimes with therapeutically active drugs) and exploited for the cure of female disorders, under most extravagant and usually absurd claims. Thus "Pierce's Favorite Prescription" is advertised as containing black cohosh, blue cohosh, goldenseal, lady's-slipper and false unicorn-root; "Dioviburnia" (Dios Chemical Co.) as containing American skullcap, cramp-bark, wild yam, blue cohosh, black haw, star-grass, trailing arbutus and false unicorn-root; "Viburnumal" (Louisville Pharmacal Works) as containing American skullcap, cramp-bark, wild yam, star-grass and motherwort.

Most pharmaceutical houses, following the lead of nostrum-makers, put similar mixtures on the market; for example: "Elixir of Viburnum Compound" (Nelson, Baker & Co.) is said to contain cramp-bark, American skullcap and wild yam; "Elixir of Hydrastis and Viburnum Compound" (Smith, Kline & French Co.), cramp-bark, goldenseal, Jamaica dogwood and pulsatilla; "Elixir of Hydrastis and Cramp Bark Compound" (Parke, Davis & Co.), cramp-bark, hydrastis, Jamaica dogwood and pulsatilla; "Fluid Extract of Cramp Bark Compound" (H. K. Mulford Co.), American skullcap, cramp-bark and wild yam; "Mother's Cordial" (Eli Lilly & Co.), cramp-bark, blue cohosh, false unicorn and squaw vine; "Uterine Sedative Elixir" (Eli Lilly & Co.), cramp-bark, goldenseal, Jamaica dogwood and pulsatilla; "Vibutero" (Fred. Stearns & Co.), cramp-bark, wild yam, black haw, squaw vine, Jamaica dogwood, saw palmetto and pulsatilla. Practically all of these drugs (except goldenseal) are ignored in the standard works on pharmacology. Further, the results of a careful examination by the Council on Pharmacy and Chemistry of the therapeutic claims made for most of them shows that these claims are not sustained by reliable clinical experience.



YOU CAN'T FLOAT A BALLOON WITHOUT GAS

The fact is that the popularity of preparations of this kind is purely an artificially created one. A nostrum containing, let us say, extractives of some little-used or worthless drugs is put on the market and heavily advertised. Should it be advertised in a manner to make it sell, a host of imitations appear and the large pharmaceutical houses put out substitutes for it. The uncritical physician does the rest. He prescribes it indiscriminately in the class of cases for which it is advertised. Naturally, a certain proportion of the patients who take it recover, and the recoveries are credited to the nostrum. A vicious circle is thus established and the demand for the stuff increases. Its sale, and the sale of similar products, continues until the overwhelming experience of those who have prescribed it proves its uselessness. In the meantime the manufacturers have reaped a harvest at the expense both of the public and of the medical profession. And the manufacturers' excuse for putting such absurd "specialties" on the market is that physicians prescribe them!

MISSOURI PROGRESSIVE

We quote from the July, 1912, *Journal of the Missouri State Medical Association* a part of the minutes of the last annual session of that body.

Dr. A. W. McAlester, Jr., Kansas City, introduced the following resolution:

WHEREAS, The American Medical Association has been doing effective work to counteract the influence of certain medical journals whose advertising pages carry many fraudulent advertisements; therefore, be it

Resolved, That it is derogatory to the best interests of the Missouri State Medical Association for members to publish articles

or papers in medical journals which are not in sympathy with the purposes of this organization; and further,

Resolved, That members are hereby requested to cease publishing original articles or other matter in journals whose advertising pages contain fraudulent and questionable advertisements and to give loyal and constant support to the *Journal of the Missouri State Medical Association*.

DR. F. J. LUTZ, St. Louis: "In moving support of this resolution, I want to say that this association has grown large and powerful and is so necessary to every physician in this state that we can declare our opinions openly and fearlessly, even though it will be some time before all our members can be persuaded to live up to them. Those who have followed the literature of this country as represented by medical journals have long been familiar with the fact that there are two groups, one in sympathy with us, practicing what they preach, the other doing as their pocket-books are served. THE JOURNAL of the American Medical Association has waged a war against certain interests opposed to us. This war was started by Dr. Moore of this association, who gave impetus many years ago to our warfare against proprietary medicines. THE JOURNAL of the American Medical Association has carried this war to a logical conclusion. We see our members enjoying the benefits of our own association and assisting month after month by publication in the opposition journals scientific contributions which make it possible for those same journals to go to proprietary medicine men and others and tell them 'our journal is supported by the main men in the medical profession, and you should advertise with us.' In the meantime the organized profession of the country is fighting these immense pocket-book concerns. I believe that we should set the seal of our disapproval on our members who furnish articles for these opposition journals. There are plenty of journals in this country who believe as we believe, who are ethical and in which all the contributions can be published with benefit. This association should follow up the good work started with the resolution of Dr. Moore in St. Louis several years ago. We should not only condemn the medicine, but fight the man who lets his articles go to these journals in opposition to our principles."

Moved and seconded that the resolution be referred to the Council. Carried. . . . Report of the Judicial Council: . . . "In the matter of the resolution submitted by Dr. McAlester . . . we express our approval of this resolution and recommend its adoption . . ." It was moved that the report be received and adopted. . . . The motion carried.

A QUEEN AND A PROPRIETARY

A Hamburg manufacturing chemist, named Wasmuth, sent to the obstetrician of the queen of Holland a sample of a remedy which he claimed would facilitate delivery. As the queen soon afterward passed through a normal childbirth, Wasmuth advertised extensively that the favorable course of the delivery was due to the action of his remedy, Rad-Jo. The obstetrician, Professor Kouwer of Utrecht, brought suit in Germany against Wasmuth for unwarranted statements, as of course Kouwer had taken no notice of the proprietary sent him. He won his suit and a fine was imposed on Wasmuth, as was mentioned in THE JOURNAL at the time. Wasmuth recently republished the same statements in a German magazine. Kouwer brought suit again and again he was awarded damages, this time $200 (1,000 marks).

Correspondence

The Mystery of Miasma as Darwin Saw It

To the Editor:—In his comprehensive notes on organic life, during the voyage of the *Beagle*, Darwin just missed disclosing the rôle of the Anopheles mosquito. At Callao, July 19, 1835, he wrote:

"The attacks of illness which arise from miasma never fail to appear most mysterious. So difficult is it to judge from the aspect of a country whether or not it is healthy that if a person had been told to choose within the tropics a situation appearing favorable for health very probably he would have named this coast. The plain round the outskirts of Callao is sparingly covered with a coarse grass, and in some parts there are a few stagnant, though very small, pools of water. The miasma in all probability arises from these: for the town of Arica was similarly circumstanced, and its healthiness was much improved by the drainage of some little pools. . . . The island of St. Jago, at the Cape de Verde, offers another strongly marked instance of a country which any one would have expected to find most healthy being very much the contrary. I have described the bare and open plains as supporting, during a few weeks after the rainy season, a thin vegetation which directly withers away and dries up. At this period the air appears to become quite poisonous, both natives and foreigners often being affected with violent fevers. On the other hand the Galapagos Archipelago in the Pacific, with a similar soil and periodically subject to the same process of vegetation, is perfectly healthy. . . . In all unhealthy countries the greatest risk is run by sleeping on shore. Is this owing to the state of the body during sleep, or to a greater abundance of miasma at such times? It appears certain that those who stay on board a vessel, though anchored at only a short distance from the coast, generally suffer less than those actually on shore."

C. H. PRESTON, Davenport, Iowa.

Some Cautions Concerning Sex Instruction for Children

To the Editor:—In the matter of sex instruction the results of experience ought to be carefully gathered. If what is called "experimental pedagogy" is essential in any field of education, it is most emphatically so in this. The mentality of the child is so very complicated that it is quite impossible to foresee what will result from change in methods of bringing up relative to sex.

Information came to me the other day from a reliable source, relative to the effect of a change of policy from the old explanation of "the doctor and the stork" to the scientific statement that the baby grows in the body of the mother, and is born, after fully grown, from its mother. A group of intelligent parents decided that they would tell no lies about the new babies, but would explain human generation somewhat fully in reply to questions by their wondering offspring. The children of this somewhat segregated group of parents were themselves playmates in a group, and all went well until a boy from the outside, a little older in body and in knowledge, entered into relations with these children brought up on scientific knowledge. He had information to give that completed the answer to the mystery of birth. Interest on the part of the children had become very keen, and one of the girls had fully made up her mind that she would like to have a baby just as her mother had. A baby would be better than a doll.

The stranger from outside gladly supplied the information as to what to do to have a baby, and the little girl who wanted a baby chose the boy she wanted for its father, and they performed the act of copulation, the fact and purpose being well understood by all the children in the group. Then came a time of great expectations on the part of all. This consequence of scientific information and of the abnormally definite interest which it had created was quite intelligently secreted from the parents by instinct, and the knowledge of this sexually abnormal state of mind on the part of the children and of the extent to which imitation of parents had gone did not reach the parents until the expectations of the children seemed to them very long in fulfilment. Finally, one of the smallest of the girls told her mother all about what was happening. Her instinct for keeping secret the great affairs of her child world was not so keen as that of others. The parents had a meeting for consultation, and decided, during vacation from school, to separate the children and to think the situation over.

This incident seems to me to teach three points of great importance to those who are interested in sex instruction:

1. Moral instruction, not physiologic, relative to sex should begin early in the lives of children. Modesty should be awakened in the girls and boys, and they should be led to see that standards for them are different from those which animals fulfil. Its chief idea should be that it is wrong to allow the thoughts and conversation to dwell on these sex matters. Purity of mind should especially be emphasized, so as to turn the children away from talking and observation relative to sex. Children need to appreciate early the fact that it is foul-minded for human beings to be thinking "smut" for their own amusement. Sex has its place in human life, but it is unladylike and unmanly to be looking and thinking at and about sex matters for amusement. Human beings control their interest in this phase of life.

2. The questions about sex come to children's minds before their capacity to utilize scientific information is developed. The old policy of holding back the interest of young children in sex by giving them the simple fiction of the "doctor and the stork" is wise in theory, as well as in experience. It satisfies their minds and deadens their interest. It does not turn their thoughts to their own bodies, and set them going through the string of questions which follow naturally and which for the child has an accumulating interest.

3. When the child becomes seriously dissatisfied with the fiction of the "doctor and the stork," then it is old enough to be instructed in sex physiology, but the foundation of modesty should have been laid beforehand, and should be very carefully built on at this time, so as to furnish a guiding morality to the child while it ponders the new facts, and interprets the actions of animals therefrom. Mere ignorance of sex physiology is not accountable for much wrong in younger childlife; ignorance of the moral standards of true men and women in sex matters is a menace to the child world. The mind of the child should be nurtured in modesty from its earliest years, and the sacredness of the person sexually should be inculcated progressively in both boys and girls and maintained as part of the discipline of the home.

MILTON FAIRCHILD, Baltimore.

Director of Instruction, National Institution for Moral Instruction.

The Picture Show and the Propaganda for Reform

To the Editor:—I dropped into a picture show out here in the desert and saw an intensely dramatic reel that interested me. The story told is as follows: A mother and two small children are left, by the death of the father, the little his labor had saved. The widow reads the "ad" of the "Vampire Investment Company" which promises 30 per cent., and invests all; then promptly loses all. She then endeavors to support herself and the two little ones by the sewing-machine, but it is a losing fight. Lack of food, squalid quarters and tuberculosis soon place the mother in a pauper's grave. The last of the reel shows the two ragged, starved waifs, the boy with a few papers, standing by the mother's grave.

The reel made a deep impression; one could scarcely hear the clicking of the machine for the sniffling of the audience. I did not sniffle but I became possessed with the idea that such a device would be of great value in "The Propaganda for Reform."

I will borrow ten to start the fund to stage the show; when you want it let me know.

RICHARD C. M'CLOSKEY, Ogden, Utah.

A Chinese Hermaphrodite

To the Editor:—Chinese speak of the *yin-yang ren* or female-male individual as if they were well acquainted with the fact that such cases exist, but after twenty-two years of experience in one of the largest cities in West China, with a daily clinic of seventy-five to 100 and 150 or 200 in-patients each month, I have now seen my first case. In some respects it is similar to the case reported by Dr. E. M. Prince, of Birmingham, Ala., in THE JOURNAL, April 27 (p. 1278).

The patient, a rather mannish looking individual with a mannish voice, aged 26, presented herself at our clinic, complaining of a tumor (tender) in the left labium majus She had been married at 16, but her husband had deserted her a short time afterward. She had never menstruated.

Examination revealed a left inguinal hernia pouching into a large labium majus but in addition to the hernia could be made out a small tender body lower in the labium, which felt like a testis or ovary. Examination of the right labium revealed a second tender body on that side. In their position over the pubic bones they caused the patient discomfort. The labia minora were small, the clitoris about 1 inch long and proportionately large; the hymen was present; the vagina, a small pouch, extended about 1½ inches beyond the hymen. The urethral orifice was normally placed, but continuing to the base of the clitoris, one could see the shiny surface of the anterior wall of the male urethra.

At the operation the funicular processes on both sides were found to be patent with a fully formed testis on each side, with omental hernia on the left side. Smears from the cut surfaces of the epididymi, which were a trifle smaller than ordinary, showed numerous spermatozoa.

J. H. MCCARTNEY, Chungking, China.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE HARMLESSNESS OF DISTILLED WATER

To the Editor:—You speak of distilled water as though it were injurious (July 27, p. 294). Can water be too pure? What is the matter with distilled water? G. H.

ANSWER.—On theoretic grounds, to say the least, the use of distilled water for drinking is unphysiologic. This is, of course, due not to the fact that the processes of distillation have been resorted to, but rather to the complete absence from the water of dissolved substances. Many animal cells speedily disintegrate when they are immersed in distilled or other "pure" water. The osmotic relations between water and solutions of salts, etc., such as are represented by the protoplasmic juices, lead to a rapid diffusion current and the entrance of water into the cells, causing them to swell and disintegrate, precisely as red blood-corpuscles will hemolyze in distilled water.

It should be noted, however, that ordinary drinking-water is far from isotonic with animal fluids and tissues, so that the differences between it and distilled water are merely those of degree. Whether or not drinking-water of any sort is irritating to the gastric cells with which it early comes into contact depends on local conditions. If the stomach is completely empty an unpleasant response may be initiated. It is not a rarity to find individuals who are unable to drink water, on an empty stomach, with comfort. Near one of the German university cities there is a very pure spring known popularly as the *Giftquelle* [poison spring]. The designation is said to have arisen from the fact that nausea occasionally is evoked in those who drink from it. The water is exceptionally deficient in dissolved substances.

In every-day experience, however, water is not regularly taken into an empty stomach, so that the presence of contents helps to avert the objections raised above; isotonicity is, further, speedily established by secretion into the hypotonic fluid; and, lastly, the gastric membrane is usually covered with a protective layer of secreted mucus. The combination of factors relieves us from the likelihood of distress or detriment under ordinary circumstances.

CHOICE OF PHYSICIAN IN STREET-CAR ACCIDENT

To the Editor:—At a certain point on its line a traction company retains three physicians without fixed salary, as company surgeons, and pays for whatever service they render. A car on this road struck a wagon and injured the driver of the wagon, who was not an employee of the trolley company. It was not determined who was responsible for the accident. None of the company surgeons being accessible, another physician was called by an employee of the company. This physician cared for the immediate need of the injured man and had him taken to a hospital. Here one of the company surgeons assisted the first physician in performing an operation made necessary by the injury. The authorized agent of the trolley company reached the hospital after the operation had been completed and notified the first physician that his services were no longer required. The patient's wishes were not consulted,

as to which physician should be retained and he expressed no preference, possibly because he was dazed as a result of the accident. Which physician should be continued in charge of the case—the one who first responded to the call or the regularly retained company surgeon? Which physician should state the question of choice of physicians to the patient when he can choose? L. R.

ANSWER.—In the case in question, the trolley company, when one of its employees called a physician, made itself responsible for the care of the injured man, and the company was within its rights in choosing the physician. So long as the injured party was passive, the corporation had a right to employ and to dismiss the physician. Up to this point the trolley company assumed responsibility for the patient and was debtor to the physician employed for the service rendered.

When the patient becomes conscious and is in mental condition to make a choice or when his responsible caretaker arrives and assumes responsibility, another condition arises. Now the patient or his next friend has the right to choose the attendant. The physician the railroad company has placed in charge may be continued and an agreement made between the company and the patient as to which shall pay the physician; or the patient may, without conference with the company, choose the physician at the time caring for him or another, and himself assume the responsibility for the payment for the service of this chosen physician. If either physician solicits the patronage of the patient, he degrades the profession. Especially is this true if he asks to be retained or to be employed on the plea that he has a technical right to serve the patient. Both physicians interested in this case may be sure that the patient and his family as well as those interested in the management of the trolley road will be well informed concerning the incidents. For either physician to continue in charge except through the choice of the party responsible, whether because of relationship or the responsibility of caring for the injured which public sentiment fixes on public carriers, will reflect on the professional dignity of that physician. Under such conditions, to use an Irish bull, "a good loser wins"—the commendation of the public.

TECHNIC OF THE SULPHUR REACTION OF SALOMON AND SAXL

To the Editor:—Please describe the technic of the sulphur reaction of Salomon and Saxl, referred to in the abstract from the *Hospitalstidende*, July 3, 1912, p. 761.

O. C. BREITENBACH, Frazee, Minn.

ANSWER.—The technic of the reaction was described in THE JOURNAL, Oct. 28, 1911, p. 1496. The following are directions given by Salomon and Saxl in the *Deutsche Medizinische Wochenschrift*, Jan. 11, 1912, p. 53: 150 c.c. of albumin-free urine are diluted with 100 c.c. of water and mixed with 150 c.c. of Salkowsky's mixture of barium salts, which consists of two volumes of a saturated solution of barium-hydroxid and one volume of a saturated solution of barium chlorid. The mixture is filtered and to 300 c.c. of the filtrate are added 30 c.c. of hydrochloric acid, specific gravity 1.12, and the mixture boiled on an asbestos mat for fifteen minutes and then left on the water-bath until the precipitate settles clear, being kept always covered with a small funnel. It is then very carefully filtered and 200 c.c. of the filtrate are heated on the asbestos mat for fifteen minutes with 3 c.c. of perhydrol (See N. N. R., p. 172, 1912 edition) and poured into a conical glass. After from four to seven hours a positive result of the reaction will be indicated by the precipitate of barium sulphate contaminated with coloring-matter which settles to the bottom. Precipitates which appear later are not regarded as characteristic.

TYPHOID INOCULATION IN CHILDREN — SCOPOLAMIN IN OBSTETRICS

To the Editor:—1. Please refer me to literature on the results of typhoid inoculation in children.

2. What is the present-day teaching with regard to the value of scopolamin (hyoscin) in obstetric practice? G. S. M., Georgia.

ANSWER.—1. After searching through our indexes for the past two years, we are unable to find any article on the subject.

2. Scopolamin, or hyoscin, used in combination with morphin to alleviate the pains of labor was at first heralded as a most valuable adjunct to obstetric practice. It has been extensively tested in several European clinics and the results of these tests have been largely unfavorable. It has received no extensive application by American obstetricians. The general opinion of the Germans is that the great danger is to the child, not to the mother. On the part of the mother, the general opinion is that there is a diminution in strength and vigor of the contractions, lengthening the duration of the labor, causing more frequent operative interference and leading to an atonic condition of the uterus, post-partum, with hemorrhage. It also interferes with bowel peristalsis and bladder function after labor. Occasionally women show an idiosyncracy against it, and for this reason it is important that the patient be under constant and careful supervision when it is administered.

On the part of the child, scopolamin-morphin shows toxic effects frequently, a large percentage of infants being born severely asphyxiated, many requiring constant attention for some hours to keep up respiration, while others are born dead because of an overdose of the drugs.

The morphin is probably the dangerous ingredient in the mixture and the results obtained should serve as a warning against any method of anesthesia in labor which involves a continuous benumbing of the sensibilities of the mother with opium or its derivatives. It is well known that infants are more susceptible to opium than adults, so that a dose which proves only stupefying to the mother is likely to be fatal to the infant. If an anesthetic must be used it should be temporarily and for such use ether is best adapted.

INFORMATION ABOUT THE PULMOTOR

To the Editor:—Please give information concerning the "pulmotor," indications for using it, and the method, cost, etc. I particularly wish to ascertain if it would be of service in mine work. E. J. R.

ANSWER.—The "pulmotor" is an apparatus, originating in Germany, for the purpose of supplanting the usual methods of artificial respiration in persons asphyxiated from any cause, using oxygen as the respiratory medium. The apparatus is contained in a case about the size of an ordinary suit-case which may be carried about. It consists of a tank containing pure oxygen under high pressure, a reservoir in which the pressure is reduced to the required degree, a flexible tube and face-mask for delivering the gas, connected with a valve or motor operated by the gas pressure, which alternately sends the gas into the lungs and creates a vacuum or negative pressure which causes an outflow from the lungs, thus imitating the normal respiration. Roth (Mechanical Artificial Respiration, *Berl. klin. Wchnschr.*, Sept. 18, 1911, p. 1729) states, on the basis of experiments conducted on animals and bodies with this apparatus, that it produces a true artificial respiration; he says that it is rather startling to see the chest of a dead body rise and fall in apparently natural respiratory movements. Experience is necessary to get the best results, or, as Roth says, the development of a technic. He has found that the danger of injury to the lungs is negligible, perhaps, but that as some of the gas goes through the esophagus into the stomach, undesirable or dangerous pressure may be caused on the heart, as he found in one instance in an experiment on a large dog. One of the instruments available for public service in Chicago has been used in instances of gas and narcotic poisoning, asphyxiation from drowning, etc., and, according to newspaper reports, in many instances with success. It would no doubt be applicable to cases of asphyxiation from mine-gas poisoning or in anesthetic accidents. Its cost is about $125.

THERAPEUTIC LITERATURE FOR PATIENTS

To the Editor:—Some time ago there was published in THE JOURNAL a list of helpful books for patients on the general subject of suggestion and encouragement. I have vainly sought to find this list through the index and otherwise, but have been unsuccessful. Please refer me to the list.

JAMES A. O'REILLY, M.D., Brooklyn.

ANSWER.—Our correspondent probably refers to a list of books given in an article by Everett J. Brown, which was published in THE JOURNAL, June 29, 1912, p. 2030. There was also a list of books on mental healing given July 29, 1911, p. 408.

DATA WANTED ON TRANSFUSION OF BLOOD

To the Editor:—Surgeons who have performed direct transfusion of blood are requested kindly to send me a report of their cases, as I am completing a work on the clinical value of transfusion. Full credit will be given to each surgeon for his cases. I especially desire the report of unsuccessful cases. A. L. SORESI, M.D.,

75 West Fifty-Fifth Street, New York.

A MEMORIAL TO DR. MCCLINTIC SUGGESTED

To the Editor:—Cannot some steps be taken toward securing a memorial to perpetuate the name and fame of that martyr to scientific medicine, Dr. Thomas B. McClintic—a hero no less worthy than any who have sacrificed their lives in the Army or Navy?

F. S. SUDDARTH, M.D., Grafton, W. Va.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

GENERAL FEDERATION OF WOMEN'S CLUBS ON PUBLIC HEALTH

One of the most important topics discussed at the eleventh biennial convention of the General Federation of Women's Clubs, held in San Francisco in July, was the improvement of public health conditions. This great body of cultured, intelligent and enthusiastic women wields an enormous influence, and is capable of securing far-reaching reforms. It has always stood squarely for sanitary progress. At the tenth biennial meeting, held in Cincinnati in 1910, resolutions endorsing the Owen bill were adopted, since which time the General Federation of Women's Clubs has been one of the strongest and most influential advocates of this measure. At the San Francisco meeting the endorsement of a national department of health was reaffirmed. Several other important resolutions on health matters were also adopted. The following resolutions were adopted at the San Francisco meeting:

WHEREAS, The General Federation of Women's Clubs, through the health department, has done an excellent work in educating the women of America to the great need concerning human life; be it therefore

Resolved, That we reaffirm our previous declaration advocating the union and strengthening of the various governmental agencies relating to pure food, quarantine, vital statistics and human health. Thus united and administered, without partiality to or discrimination against any school of medicine or system of healing, they would constitute a single health service not subordinated to any commercial or financial interests, but devoted exclusively to the conservation of human life and efficiency; and be it further

Resolved, That this health service should cooperate with the health agencies of our various states and cities, without interference with their prerogatives or with the freedom of individuals to employ such medical or hygienic aid as they may see fit.

WHEREAS, Accurate registration of births and deaths is the essential basis for intelligent efforts to conserve infant life, to secure the education of all children and to protect their working life and legal rights; therefore be it

Resolved, That the General Federation of Women's Clubs requests the Children's Bureau to prepare in brief form for popular distribution such material as may be available concerning the present degree of registration of births and deaths in this country and the best methods of securing complete returns.

WHEREAS, England, Germany, France, Sweden and nearly all the enlightened nations of the world have proved that medical inspection of schools for the avoidance of contagion and the correction of physical defects; that outdoor schools for the physically weak, and that the employment of competent school nurses have proved useful in lessening truancy, decreasing absence from sickness and alleviating suffering; therefore be it

Resolved, That we recommend to the Federated Clubs the necessity for carrying forward such plans as shall relieve physical defects and educate the young for stronger bodies and more wholesome living.

WHEREAS, Innocent women and children of our land are the greatest sufferers from venereal diseases in the marriage relation; be it therefore

Resolved, That the General Federation of Women's Clubs puts itself on record as believing in properly endorsed certificates of health or of freedom from venereal disease, for all applicants for marriage licenses; and be it further

Resolved, That this same body urge the respective states to pass a law similar to that of Indiana, which requires such a certificate.

Adopted.

The Constitution of Protoplasm.—That living protoplasm is a colloidal solution of the nature of an emulsion is the idea put forward a short time ago by Lepeschkin in a preliminary paper on the structure of protoplasm. Under certain conditions this emulsion may become transformed into gelatinous foam with fluid honeycomb-like walls. Further, the colloidal parts, in which Brownian movement is exhibited, probably consist of a great variety of heterogeneous compounds. Owing to the slow movement of the colloid material, chemical change in any part is not distributed immediately but tends to cause changes in the protoplasm at that particular part. These changes are evidenced by movements such as contraction of the cell or by the separation of special substances. These movements, etc., accelerate the motion of the plasma, and in this way the effect of the stimulus is eventually distributed to all parts.—*British Medical Journal.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ILLINOIS: Coliseum Annex, Chicago, September 24-26. Sec., Dr. James A. Egan, Springfield.

IOWA: Capitol Bldg., Des Moines, September 11-13. Sec., Dr. Guilford H. Sumner, State House.

MASSACHUSETTS: State House, Boston, September 10-12. Sec., Dr. Edwin B. Harvey, Room 159, State House.

NEW YORK: September 17-20. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

Georgia May Report

Dr. C. T. Nolan, secretary of the Regular Board of Medical Examiners of Georgia, reports the written examinations held at Atlanta, May 1, 2, 3 and 4, and at Augusta May 16-18, 1912. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 80. The total number of candidates examined was 184, of whom 172 passed and 12 failed. Six candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Birmingham Medical College	(1911)	82
George Washington University	(1910)	87
Howard University, Washington, D. C.	(1910) 84.5; (1911)	80
University of Georgia	(1911) 86.5; (1912) 80, 80, 82.5, 83, 83, 84, 84.5, 85, 85, 85.5, 85.5, 85.5, 86, 86.5, 87.5, 87.5, 88.5, 89, 89,-89, 89, 89, 89.5, 90, 90, 90.5, 91.5, 91.5, 94.5, 95.	
Atlanta College of Physicians and Surgeons	(1910) 84.5; (1912) 80, 80, 80.5, 81, 81, 81.2, 81.5, 81.5, 81.5, 82.5, 83, 83, 83, 83, 83, 83.6, 84, 84, 84.5, 85, 85, 85.5, 85.5, 85.5, 85.5, 85.5, 86, 86, 86, 86.5, 86.5, 87, 87, 87.5, 88, 88, 88.5, 88.5, 88.5, 88.5, 88.5, 89, 89, 91.5, 92.5, 93.5, 94, 95.	
Atlanta School of Medicine	(1912) 80, 80, 80.5, 81, 81.5, 81.5, 81.5, 81.5, 82, 82, 82.5, 82.5, 82.5, 83, 83, 83.5, 83.5, 83.5, 83.5, 83.5, 83.5, 84, 84, 84, 84, 84.5, 84.5, 85, 85, 85.5, 85.5, 86, 86, 86, 87, 87.5, 88, 88, 88, 88.5, 88.5, 88.5, 89.5, 90.	
University of Louisville	(1909)	85
Tulane University of Louisiana	(1901) 75; (1910)	83.5
Johns Hopkins University	(1903) 96; (1904) 90; (1911)	85
Woman's Medical College of Baltimore	(1897)	83
Baltimore Medical College	(1898) 82.7; (1904)	90.5
University of Maryland	(1908) 83; (1910)	83
College of Physicians and Surgeons, Baltimore	(1911)	85
College of Physicians and Surgeons, Boston	(1905)	84
Leonard Medical School	(1908)	87.5
St. Louis College of Physicians and Surgeons	(1898)*	
University of Pennsylvania	(1911)	87.5
Jefferson Medical College	(1901) 85; (1909)	85.5
Medical College of the State of South Carolina	(1903) 92; (1904) 92; (1911) 83.5, 86.	
Meharry Medical College	(1908) 86; (1912) 80, 81.5, 81.5, 82, 83, 85, 86.	
Vanderbilt University	(1909) 93.1; (1911)	87.5
Memphis Hospital Medical College	(1903) 84; (1911)	90
Chattanooga Medical College	(1910)	84
University College of Medicine, Richmond	(1911)	86
University of Virginia	(1902) 80; (1905) 85; (1908) 87; (1909) 85; (1910) 79.5.	

FAILED

College		
Howard University, Washington, D. C.	(1912)	72
Atlanta College of Physicians and Surgeons	(1912)	74.5
Atlanta School of Medicine	(1912)	77.5
College of Physicians and Surgeons, Boston	(1911)	74.5
University of the South	(1905)	65
Chattanooga Medical College	(1907)	73
Meharry Medical College	(1912) 74, 76.5, 76.5, 76.5,	77
University of Tennessee	(1910)	74

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1895)	Indiana
College of Physicians and Surgeons, Chicago	(1894)	Michigan
University of Louisville	(1884)	Michigan
University of Maryland	(1904)	Maryland
Michigan College of Medicine and Surgery	(1900)	Michigan
University of Minnesota	(1906)	Tennessee

* Licensed on diploma.

Nebraska May Report

Dr. C. P. Fall, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, May 22-23, 1912. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 59 of whom 56 passed and 3 failed. Fifteen candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital, Chicago	(1911)	79.1
Chicago College of Medicine and Surgery	(1906)*	

Rush Medical College ..... (1912) 82.9
Bennett Medical College ..... (1912) 80.1, 81.9, 83.7
College of Physicians and Surgeons, Keokuk ..... (1876) *
University of Michigan, Dept. of Med. and Surg. .... (1911) 75.6
University Medical College, Kansas City ..... (1912) 83.9, 86.2
Cotner Medical College (1893) 81.6; (1899) 80.1; (1911) 75; (1912) 76.7, 80.4, 82.1, 84.1.
University of Nebraska (1902) *; (1911) 85.1; (1912) 78.9, 81, 82.9, 84.9, 86.4, 88.7.
Creighton Medical College (1911) 79.9; (1912) 76.1, 76.7, 76.9, 78.4, 78.4, 78.5, 79.1, 79.6, 79.7, 80, 80.2, 80.6, 80.7, 80.7, 80.7, 81.1, 81.4, 81.5, 81.9, 82, 82.1, 82.6, 83.5, 83.7, 84.5, 85.9, 86.2, 86.6, 86.9, 88.

FAILED

Cotner Medical College ..... (1912) 74.2
Creighton Medical College ..... (1912) 74.2, 74.2

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Georgia College of Eclectic Medicine and Surgery	(1912)	Georgia
National Medical University, Chicago	(1909)	Illinois
Northwestern University Medical School	(1910)	Illinois
Rush Medical College (1897) Minnesota;	(1903)	Iowa
Chicago College of Medicine and Surgery	(1908)	Illinois
College of Physicians and Surgs., Chicago (1901)	(1910)	Illinois
State University of Iowa, College of Medicine	(1905)	Iowa
Western Eclectic College of Medicine and Surgery	(1908)	Kansas
Medical School of Maine	(1882)	Maine
Ensworth Medical College	(1909)	Kansas
University Medical College, Kansas City	(1908)	Kansas
Eclectic Medical College, Cincinnati	(1910)	Ohio
Cleveland Homeopathic Medical College	(1879)	Michigan

* No grade given.

Michigan May Report

Dr. B. D. Harison, secretary of the Michigan Board of Registration in Medicine, reports the written examination held at Detroit, May 16-18, 1912. The total number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75, and not less than 50 in any one subject. The total number of candidates examined was 44, all of whom passed. Two of these candidates were previously registered on the basis of their diplomas. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1910)	85.7
Detroit Homeopathic College	(1912)	81.4, 82.5, 82.8, 84.3
Detroit College of Medicine (1912) 75, 75.2, 75.6, 77.2, 78.8, 78.9, 79.2, 79.6, 80.2, 80.3, 80.9, 81.6, 81.7, 81.8, 82, 82.1, 82.2, 82.5, 82.5, 83.4, 83.7, 83.8, 83.8, 83.9, 84.1, 84.2, 84.5, 84.8, 84.9, 85.1, 85.6, 86.1, 86.3, 86.9, 87, 87.2, 89.2.		

Kansas June Report

Dr. H. A. Dykes, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, June 11-14, 1912. The total number of subjects examined in was 10; total number of questions asked, 100; precentage required to pass, 75. The total number of candidates examined was 41, of whom 36 passed and 5 failed. Twenty candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Rush Medical College ..... (1904) 82;	(1911)	80
Chicago College of Medicine and Surgery	(1912)	76
University of Kansas (1912) 77, 78, 81, 81, 81, 82, 83, 84, 87, 88.		
Kansas Medical College (1912) 76, 76, 78, 79, 79, 80, 81, 81, 83.		
Tulane University of Louisiana	(1912)	86
Tufts College Medical School	(1907)	78
Kansas City Medical College	(1903)	84
University Medical College, Kansas City (1912) 76, 77, 79, 80.		
Kansas City Hahnemann Medical College (1912) 75, 76, 78, 83, 85.		
Ohio-Miami Medical College	(1912)	87
University of Pennsylvania	(1908)	83

FAILED

University Medical College, Kansas City	(1912)	65, 69
Kansas City Hahnemann Medical College	(1912)	55, 68
Memphis Hospital Medical College	(1912)	58

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1910)	Illinois
Chicago College of Medicine and Surgery	(1910)	Illinois
Hahnemann Medical College and Hospital, Chicago	(1891)	Indiana
Chicago Homeopathic College	(1897)	Illinois
Keokuk Med. College, College of Phys. and Surgs.	(1906)	Iowa
Drake University	(1886)	Iowa
Hospital College of Medicine, Louisville	(1905)	Tennessee
Baltimore University	(1897)	Ohio
University of Michigan, Dept. of Med. and Surg. (1903) (1908)		Michigan.
Hamline University	(1901)	Minnesota
American Medical College, St. Louis	(1906)	Nebraska
St. Louis University	(1911)	Missouri
Barnes Medical College	(1897) (1901)	Missouri
Missouri Medical College	(1899)	Illinois
University Medical College, Kansas City	(1907)	Missouri
St. Louis College of Physicians and Surgeons	(1898)	Illinois
University of Pennsylvania	(1893)	Missouri
University of Edinburgh, Scotland	(1908) *	

* Licensed on endorsement of foreign credentials.

Maryland Homeopathic June Report

Dr. O. N. Duvall, secretary of the Homeopathic Board of Maryland, reports the written examination held at Baltimore, June 13-14, 1912. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 3, all of whom passed. The following college was represented:

PASSED

College	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital, Philadelphia	(1902)	84.6; (1912) 89.2; 89.3.

Maryland June Report

Dr. J. McPherson Scott, secretary of the Maryland Board of Medical examiners, reports the written examination held at Baltimore, June 18-21, 1912. The number of subjects examined in was 9; percentage required to pass, 75. The total number of candidates examined was 146, of whom 112 passed and 34 failed. Ten candidates have been licensed through reciprocity since Jan. 1, 1912. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1912)	81
Georgetown University	(1908) *	
Baltimore University	(1907)	76
Johns Hopkins University (1906) 85; (1910) 83; (1911) 83; (1912) 76, 80, 80, 81, 82, 82, 82, 83, 83, 83, 83, 83, 83, 84, 85, 85, 86, 86, 86, 87, 87, 87, 88, 88, 88, 88, 88, 89, 89, 89, 89, 90, 90, 90, 90, 91, 91, 91, 91, 93, 94.		
University of Maryland (1905) 79; (1910) 76; (1911) 82, 86; (1912) 75, 77, 78, 78, 78, 78, 79, 80, 80, 81, 82, 82, 83, 83, 84, 84, 85, 85, 85, 86, 87, 88, 89, 91.		
Baltimore Medical College (1908) 79; (1911) 78; (1912) 77, 81, 81, 82, 84, 85, 87, 87, 88, 88, 88.		
Maryland Medical College	(1912) 75, 79, 81, 84, 87	
College of Physicians and Surgeons, Baltimore (1912) 75, 76, 77, 80, 82, 84.		
University of Pennsylvania	(1912)	81
Jefferson Medical College	(1911)	82, 82
Medico-Chirurgical College, Philadelphia (1912) 80, 84, 84, 85, 85		
Woman's Medical College of Pennsylvania (1910) 82.2; (1911) 79		
Temple University	(1912)	76, 81

FAILED

Georgetown University	(1911)	74
Howard University, Washington, D. C.	(1911)	63, 68
Maryland Medical College (1907) 63; (1910) 58, 65; (1911) 64; (1912) 44, 44, 51, 59, 61, 64, 65, 67, 67, 69, 71, 71, 71, 72, 72, 73.		
University of Maryland ..... (1911) 70; (1912) 62, 70, 73, 74		
Baltimore Medical College ..... (1911) 74; (1912)		72
College of Physicians and Surgeons, Baltimore	(1912)	67, 70
Johns Hopkins University	(1912)	64
Woman's Medical College of Pennsylvania	(1910)	67

LICENSED THROUGH RECIPROCITY SINCE JAN. 1, 1912

College	Year Grad.	Reciprocity with
University of Maryland (1898) West Virginia;	(1904)	S. Carolina
Baltimore Medical College	(1907)	Louisiana
Maryland Medical College	(1902)	Delaware
College of Physicians and Surgeons, Boston	(1902)	Maine
University of Pennsylvania	(1910)	Virginia
Jefferson Medical College	(1904)	Delaware
Medical College of the State of South Carolina	(1906)	S. Carolina
University of the South	(1908)	W. Virginia
Medical College of Virginia	(1910)	Virginia

* Licensed by special examination.

The following questions were asked:

ANATOMY

1. What are the characteristics of the cervical vertebræ? 2. Describe the knee-joint. 3. Origin, course and distribution of phrenic nerve. 4. Describe the prostate gland. 5. Give origin, course and termination of saphenous veins. 6. Of what does the sympathetic nervous system consist? 7. (a) What are the divisions of the brain? (b) Name the principal fissures; (c) What fissures divide each hemisphere into lobes? (d) Name the lobes of the brain; (e) Of what does the corpus callosum consist? 8. Gross anatomy of lungs. 9. Give origin, insertion and nerve-supply of the following muscles: brachialis anticus, infraspinatus, pectoralis minor, serratus magnus, piriformis. 10. Name visceral branches of abdominal aorta; or, what arteries supply the thyroid body and from what larger vessels are they derived.

CHEMISTRY

1. Explain the following terms: (a) reaction, (b) nascent state, (c) molecular weight, (d) colloid, (e) valence, and give an example of each. 2. Describe in detail the chemical examination of a specimen of urine, giving the tests used, and the results you would expect if urine was pathological. 3. Give one chemical antidote for each of the following: (a) argenti nitras, (b) phenol, (c) zinci

sulphas, (d) arseni trioxidum, (e) acidum sulphuricum. 4. Define: (a) amphoteric reaction, (b) ptomaines, (c) halogens, (d) specific gravity, (e) calory. 5. Give the chemical formula of each of the following: (a) ethyl alcohol, (b) methyl alcohol, (c) iodoform, (d) glycerin, (e) benzine. 6. (a) What are precipitins? (b) Lysins? (c) Agglutinins? (d) What is a toxin? (e) What is antitoxin? 7. What are normal and decinormal volumetric solutions? How are they made? 8. (a) How would you show the presence of organic matter in water? (b) Name the chief constituents of milk? (c) Give the properties, chemical formula and uses of permanganate of potash. 9. Describe Marsh's test for arsenic. 10. Give a chemical classification of foodstuffs with an example of each.

PHYSIOLOGY

1. Describe the physiologic changes in the uterine muscles during pregnancy and puerperium. 2. Define systolic, diastolic and mean arterial pressure. 3. Leukocytes: (a) number normally, (b) some of the conditions affecting the number, (c) classification of the varieties. 4. (a) Describe blood-plates. (b) Give three tests for blood. 5. Define eupnea, dyspnea, hyperpnea and apnea. 6. Urine, specific gravity, reaction and average quantity in twenty-four hours. Quantity of urea in twenty-four hours. 7. Aphasia. Define the difference between sensory and motor. 8. State what is known of the thymus gland. 9. Name four glands having internal secretions and the effect of these secretions. 10. (a) Name the bile-salts. (b) The bile pigments. (c) Give Pettenkofer's test for bile-acid, and Gmelin's test for bile-pigment.

PATHOLOGY

1. Hookworm. Give scientific name, life history and method by which infection occurs. 2. Obstructive jaundice. How caused? Mention four lesions causing this symptom. What surgical significance has jaundice, and why? 3. Define atrophy, hyperplasia, complement, thrombus and infarction. 4. Mention three conditions, not obstructive, that cause dyspnea. Discuss one of the three named and explain fully why it causes dyspnea. 5. Describe the general method used to isolate and recognise bacteria. 6. Describe the appearance and condition of the bladder late in a case of prostatic hypertrophy of long standing. 7. Give the morbid anatomy of acute poliomyelitis. 8. What is the vaccine which is used to immunize against small-pox? How is it prepared? How does it act? 9. What are the distinguishing features of a malignant growth? 10. Give the morbid anatomy of emphysema.

PRACTICE OF MEDICINE

1. Define: (a) Landry's paralysis; (b) pellagra; (c) nephrolithiasis; (d) dysphagia, and name some diseases in which it occurs; (e) cretinism. 2. Define: (a) percussion; (b) menstruation; (c) auscultation; (d) succussion; (e) palpation. 3. Give differential diagnosis between membranous and spasmodic croup. 4. Renal and hepatic colic. 5. Peritonitis and enteritis. 6. Hysteria and epilepsy. 7. Give treatment of pertussis. 8. Give treatment of interstitial nephritis. 9. Give diagnosis and treatment of sérofibrinous pleurisy. 10. Give cause, diagnosis and treatment of tetanus.

SURGERY

1. Define proctoclysis. Describe its uses and mode of administration. 2. Describe Fowler's position and conditions adapted to its use. 3. Define gastro-enterostomy. Describe the operation and a case of a character requiring such a procedure. 4. Hemorrhoids. Describe and give an operation for their radical cure. 5. Mastoiditis. Causes and treatment. 6. Ophthalmia neonatorum. Causes and treatment. 7. Define hyperthyroidism; its diagnosis. Describe a case in your judgment requiring surgical treatment. 8. Colles' fracture. Describe and give its treatment. 9. Describe pes planus. Give its cause and treatment. 10. Define orchitis, osteitis, osteomyelitis.

MATERIA MEDICA

1. Mention six methods of administering drugs and give one example of each method. 2. Name some circumstances which may modify the effect of drugs. 3. Name three drugs which act as circulatory stimulants and dose of each. Name three circulatory depressants. 4. Write a prescription for a 3-ounce mixture containing syrup of ipecac, potassium citrate and syrup of wild cherry for a child 2 years old. One for an adult containing arsenic, strychnin, iron and quinin in pill form, using official names and endings. 5. Give official name and adult dose of calomel, Epsom salts, Hoffman's anodyne, Brown's mixture, paregoric, Fowler's solution and Donovan's solution. 6. Give official preparations of digitalis with adult dose of each. 7. What is an anthelmintic? Name three drugs used as such. 8. What is the source of ichthyol, iodin, opium, ergot and camphor. 9. Give the average adult dose of potassium iodid, compound jalap powder, extract cannabis indica, fluid extract of ergot and morphia sulphate. 10. What is salicylic acid? How prepared and its salts.

THERAPEUTICS

1. Write a prescription in Latin, without abbreviation, containing four ingredients which you would use for chronic bronchitis with abundant secretion, with direction for use. 2. Write a prescription in Latin, without abbreviation, containing four ingredients which you would use for an acute bronchitis, with directions for use. 3. Give the indications for and therapeutics of a venesection. 4. Define chemical incompatibility and physiologic antagonism and write two prescriptions in Latin, without abbreviation, illustrative, and explain the incompatibility and antagonism. 5. What are the therapeutic uses of opium? Describe symptoms of poisoning and treatment. 6. What are the therapeutic uses of strychnin. Describe symptoms of poisoning and treatment. 7. Describe means and method of inducing local and general anesthesia, dangers and prevention. 8. Give the therapy of digitalis and contra-indications for its use. 9. Give the physiologic action and therapeutics of santonin. 10. Give the physiologic action and therapeutics of oleum ricini.

OBSTETRICS

1. Describe the ovaries and their structure. 2. What is puberty? 3. Describe the fetal heart sounds, their rate, when and where best heard? 4. Describe external pelvimetry. 5. What is ballottement? 6. How would you do a pubiotomy? 7. What treatment would you use in the pernicious vomiting of pregnancy? 8. How would you treat inertia uteri during labor? 9. Describe the operation for ventrifixation and suspension. 10. Give treatment of acute infectious diarrhea in infancy.

Book Notices

MODERN THEORIES OF DIET AND THEIR BEARING ON PRACTICAL DIETETICS. By Alexander Bryce, M.D., D.P.H. (Camb.). Cloth. Price, $2.10 net. Pp. 368. New York: Longmans, Green & Co., 1912.

The general scope of this book is best shown in an enumeration of the titles of the chapters: "Theories of Metabolism" (two chapters; seventy-six pages); "Vegetarianism in Theory and Practice;" "Low Protein Theory and Practice;" "Purin-Free or Uric Acid-Free Diet in Theory and Practice;" "Hyperpyremia in Theory and Practice;" "Dietetic Theories Associated with the Mineral Salts;" "Dietetic Theories Associated with Water;" "The Theory and Practice of Efficient Mastication;" "The Curdled Milk Theory and Practice;" "The No-Breakfast Plan in Theory and Practice;" "Raw Food in Theory and Practice;" "Yeast-Free Bread in Theory and Practice;" "Forced Feeding in Theory and Practice;" "Fasting in Theory and Practice;" "Conclusion—the Practice of Moderation." Except for the first two chapters the book can readily be understood by the intelligent lay reader, although it is intended primarily for medical men. The author discusses in a sane and moderate manner the various theories, practices and fads in dietetics with which one comes in daily contact. We know of no book that can be read more profitably and with such sustained interest by the physician or the intelligent layman who wishes to orient himself in this wilderness of dietetic theories and practices.

MANUAL OF CLINICAL CHEMISTRY, MICROSCOPY AND BACTERIOLOGY. By Dr. M. Klopstock and Dr. A. Kowarsky. Cloth. Price, $3. Pp. 371, with 59 illustrations. New York: Rebman Company, 1912.

In these days in which the advances in clinical diagnosis are assuming such proportions, a manual such as the above is of special importance. In its preparation "the needs of daily practice have been especially considered in the choice of methods of examination." The authors have been successful in presenting clearly and concisely methods which are both simple and reliable. All of the details essential for general work have been given, so that one may be certain of the points involved in any test he may make.

The subject-matter is arranged in eleven chapters dealing with the examination of the various secretions and excretions of the body. A special chapter treating of the usual bacteriologic methods will be found very serviceable. The mechanical part of the book is excellent. While the illustrations are entirely adequate, many of them might be much improved. The book is commended especially to the general worker as a reliable outline of the more important phases of this extensive subject.

DIFFERENTIAL DIAGNOSIS. Presented Through an Analysis of 385 Cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard University Medical School. Second Edition. Cloth. Price, $5.50. Pp. 764, with illustrations. Philadelphia: W. B. Saunders Company, 1912.

The frequent reprintings of the first edition of this book testify to its popularity among physicians and students. In the second edition certain minor changes have been made, including the introduction of two new cases, and the correction of typographical errors. The diagnosis of disease is discussed from the standpoint of the presenting symptom, such as pain, headache, vomiting, etc., and cases are cited illustrating the various conditions which may give rise to the symptoms complained of. This method of discussion offers a favorable opportunity for the teaching of rational therapeutics based on a knowledge of the underlying pathologic conditions.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By John J. Reese, M.D. Eighth Edition. Revised by D. J. McCarthy, A.B., M.D. Cloth. Price, $3. Pp. 660. Philadelphia: P. Blakiston's Son & Co., 1911.

The eighth edition follows the same general lines as the seventh, with some slight alterations and the addition of new matter. The principal changes concern the subject of insanity, which has been revised and a more modern classification adopted. Anaphylaxis has been considered in connection with toxicology.

Medicolegal

Chauffeurs Without Authority to Employ Physicians

(Habhegger et al. vs. King (Wis.), 135 N. W. R. 166)

The Supreme Court of Wisconsin reverses a judgment rendered in favor of the plaintiffs, physicians, remanding the cause with directions to render judgment for the defendant. A boy had been run over and injured in the public street by a minor son of the defendant, while using the latter's automobile for his own pleasure or convenience, although it was stipulated on the trial that this was purely accidental, and without fault on the part of the defendant's son, who took one of the plaintiff's in the automobile to the hospital where the injured boy had been taken, informed the physician of what had occurred, and while at the hospital requested the physician to give the injured boy every attention to save his life. The son did not attempt to contract on behalf of his father; nor did the plaintiffs communicate with the defendant at any time before the completion of the services. When the injured boy was about to be discharged from the hospital, the hospital superintendent, in an interview with the defendant, told him that the boy's mother was poor and would probably never be able to pay for the hospital charges, and requested the defendant to do something toward paying the bill, whereupon the defendant paid the hospital bill, informing the superintendent that he was not responsible. The second day after that he received a bill from the plaintiffs for their services. He had heard that they were attending the injured boy at the hospital, but did not know they were making a claim against him until he received their bill, which he refused to pay. The plaintiffs had a verdict finding that the son had general permission from his father to run and operate his father's automobile, and that the services in question were performed at the request of the son.

The law relating to the agency of servants to bind the employer to pay for physicians or nurses in attendance on persons injured by the negligence of such servants will be found, the court says, in Adams vs. Southern Railway Co., 16 Am. & Eng. Ry. Cas. (N. S.) pp. 369 to 379, where the cases are collected. Also in Hanscom vs. Railway Co., 53 Minn. 119; 54 N. W. R. 944; 20 L. R. A. 695. The employment must have been of such a nature that this act of the servant is reasonably within its scope, as in the case of a general superintendent of a railway company, general manager or agent, and by some authorities a railroad conductor. These cases go largely on the corporate character of the employer, the usual practice pursued, and the great exigency which arises in railroad disasters and the dangerous character of the business. A mere chauffeur or automobile driver in a town where the employer is known and can be readily reached by telephone, or by other speedy and certain means of communication, would not ordinarily possess such authority. Neither would an infant son using his father's automobile under like circumstances. Besides, the stipulation that the injuries here were the result of mere accident, for which the boy in charge of the automobile was not to blame, cut away the groundwork of such implied agency, even if otherwise within the reasonable scope of employment, by reason of an implied authority to save the employer from damages caused by negligence of the employee. The conclusion of the trial court that the boy had in law implied authority to employ physicians at the expense of his father was incorrect.

Admissibility of Testimony as to Statements of Patient as to Past Condition

(Acme Cement Plaster Co. vs. Westman (Wyo.), 122 Pac. R. 89)

The Supreme Court of Wyoming says that in this personal injury case against the company one of the physicians who attended and treated the plaintiff for his injury was called as a witness on behalf of the plaintiff and gave his opinion as to the extent and permanency of the injury, and also as to the necessity for the performance of a surgical operation which had been performed on the plaintiff's head as a part of such treatment. He was permitted to testify, over the objection of the defendant, to statements made to him by the plaintiff in relation to his condition, sensations and feelings in the past, which ruling was assigned as error. The rule seems to be quite well settled that such statements of the party injured, narrative of past conditions or suffering, made by the ordinary witness are inadmissible in evidence; but a physician may testify to a statement or narrative given by a patient in relation to his condition, symptoms, sensations and feelings, both past and present, when such statements were received during and were necessary to an examination with a view to treatment, or when they are necessary to enable him to give his opinion as an expert witness. This evidence was admissible for the purpose of affording the jury the means of determining the weight to be given to the opinion of the physician, but not as evidence tending to prove the actual condition of the plaintiff at the time of which he spoke, and the jury should have been so cautioned. For the purpose indicated, there was no error in admitting the testimony.

Society Proceedings

COMING MEETINGS

Amer. Assn. for the S. and Prev. of Inf. Mort., Cleveland, Oct. 2-5.
Amer. Assn. of Obstetricians and Gynecologists, Toledo, Sept. 17-19.
American Association of Railway Surgeons, Chicago, Oct. 16-18.
American Electro-Therapeutic Association, Richmond, Va., Sept. 3-5.
American Public Health Association, Washington, D. C., Sept. 18-20.
American Roentgen Ray Society, Niagara Falls, Sept. 11-14.
Assn. of Military Surgeons of the United States, Baltimore, Oct. 1-4.
Colorado State Medical Society, Pueblo, Sept. 24-26.
Conf. State Bds. of Health of N. Am., Washington, D. C., Sept. 20-21.
Delaware State Medical Society, Wilmington, Oct. 8.
Indiana State Medical Association, Indianapolis, Sept. 26-27.
Internat. Congress on Hygiene, etc., Washington, D. C., Sept. 23-28.
Kentucky State Medical Association, Louisville, Oct. 29-31.
Medical Association of the Southwest, Hot Springs, Ark., Oct. 8-10.
Medical Society of the Missouri Valley, Council Bluffs, Ia., Sept. 5-6.
Medical Society of Virginia, Norfolk, Oct. 22-25.
Mississippi Valley Medical Association, Chicago, Oct. 22-24.
Nevada State Medical Association, Reno, Oct. 8-10.
New Mexico Medical Society, Roswell, Sept. 12-14.
Pennsylvania State Medical Society, Scranton, Sept. 23-26.
Utah State Medical Association, Ogden, Oct. 1-2.
Vermont State Medical Society, Montpelier, Oct. 10-11.
Wyoming State Medical Society, Sheridan, Sept. 17.

MINNESOTA STATE MEDICAL ASSOCIATION

Forty-Fourth Annual Meeting held at Duluth, Aug. 14 and 15, 1912

The President, DR. HALDOR SNEVE, St. Paul, in the Chair

Officers Elected

The following officers were elected: president, Dr. Richard J. Hill, Minneapolis; vice-presidents, Drs. Henry C. Cooney, Princeton and Samuel H. Boyer, Duluth; secretary, Dr. Thomas McDavitt, St. Paul (reelected); treasurer, Dr. Earle R. Hare, Minneapolis, and delegates to the American Medical Association, Drs. Thomas McDavitt, St. Paul, Leo M. Crafts, Minneapolis and John W. Andrews, Mankato.

Post-Rheumatic Ankylosis

DR. RALPH ST. J. PERRY, Parker's Prairie: Ankylosis may follow any form of articular rheumatism, simple, gonorrheal or gouty, in any person of any age or sex, and the diagnosis, after excluding other diseases, involves chiefly the kind of ankylosis, its degree and duration. The treatment of post-rheumatic ankylosis is prophylactic and curative. The corrective treatment can be divided into the manipulative, medicinal, operative and psychic. Manipulation may be either manual or mechanical. The manual may be gentle and prolonged in character, but more satisfactory results in cases involving the extremities can be immediately and effectually secured by using forcible flexion and extension, breaking up all fibrous adhesions and giving the joint the fullest possible motion at one treatment.

In aggravated cases of post-rheumatic ankylosis, in which there is osseous union, it becomes necessary to resort to arthroplastic operations. When an arthroplastic operation is correctly performed in a suitable case, and the proper after-

treatment carried out, there is a reasonable assurance that the patient will have a freely movable joint, free from pain and which will support weight and withstand traction.

DISCUSSION

DR. R. E. FARR, Minneapolis: These cases are instances of metastatic arthritis and if treated early, along the lines indicated by Murphy, ankylosis would be prevented. They are not cases of rheumatism at all, but are cases of septic metastatic arthritis.

DR. HOMER C. COLLINS, Duluth: We give this class of cases about as much attention, as a rule, as we do the ordinary neurasthenic.

DR. EMIL S. GEIST, Minneapolis: One feature in the paper which impressed me was the value of massage in the after-treatment of these cases.

DR. D. O. THOMAS, Minneapolis: In a case of ankylosis of the shoulder-joint, there being no movement, except that of the scapula, I anesthetized the patient, and broke the ankylosis, then kept up motion for two or three weeks, gave salicylates and the patient got entirely well.

The Phthalein Test in a Group of Medical Cases

DR. HENRY L. ULRICH, Minneapolis: My group of cases, fifty-eight in number, as well as the number of readings, sixty-two, are not large enough to draw definite conclusions. That there is a reduction in the total amount and in the first hour when there is an acute condition of the kidney, my series gives satisfactory evidence. In the mild chronic kidneys, the slowly progressive diffuse nephritis, the findings are rather variable. The readings gave evidence in the three cardiorenal cases which were consistent with the clinical improvements. Finding two out of three obstetric cases at term below normal function raises the point whether most gravid women are low at this period. From others of larger experience and from my own, I feel that the test will distinctly add to our knowledge of renal values both in kidney lesions as well as cardiorenal conditions. That in chronic renal lesions repeated reading at short intervals will disclose some of the reasons for the variance which single readings so far have elicited. Such a series may also throw light on the possible compensatory functions of other organs in cases of very low function and the patient may yet be in apparent general fair economy.

DISCUSSION

DR. J. M. LEWIS, Minneapolis: I have found this method of great assistance. In cases of chronic nephritis, without albumin or casts, it affords the best method of diagnosis. In cases of albuminuria of adolescence, it enables us to establish the best course of treatment and is the best guide to the diet and exercise. In cases in which the urine is loaded with albumin and casts, it enables us to make a satisfactory prognosis. If in cases of this type we find the elimination normal, we may hope the disease (parenchymatous) is of a favorable character or confined to one kidney, or that the kidneys may be suffering from disturbance in some other part of the body, and the patient may have good elimination indefinitely. In surgical kidney, by segregating the urine, it will show which kidney is capable of sustaining life and whether operation can be undertaken safely. In my judgment, this is the only sure method that shows the degree of disturbance of renal elimination.

Suprapubic Prostatectomy

DR. E. S. JUDD, Rochester: Until within the past few years the perineal operation for removal of the hypertrophied prostate was the operation of choice in this country. As advocates of this method we have argued, first, that the mortality was less and, second, that the time of convalescence was shorter since the perineal wound healed much more quickly than the suprapubic. Studying the cases more carefully we have found that the mortality is not directly a result of the operation, but that it depends on the functional capacity of the kidneys and the condition of the heart and general circulation, and that it is the same with either operation. We have been able to reduce greatly the mortality by proper preparation of the patient before operating.

In the sixty-nine cases operated on by the suprapubic route, two were quite extensively infected. Rather a small percentage of them healed without having had some urinary leakage through the wound, though most of the wounds have entirely healed and the patients were able to go home within three weeks. The patients have been much more comfortable during the period of convalescence, have not had to contend with the urine-soaked dressing, nor have they had the run of temperature and the sick appearance, due to absorption from infection in this space, that accompanied the old method. While the patients have required considerable care during the first twenty-four hours after the operation, after that time they are much easier to care for, requiring very little dressing.

While we have had some mortality in this series of cases, it could not in any way be attributed to the technic of the operation and would have occurred no matter what operation was done. If the patient be a bad risk, especially if he has a cardiac complication, it will be best to introduce the suprapubic tube into the bladder for the first twenty-four hours. If the bladder has been completely sutured, any clotting in the urethral catheter may cause considerable suffering. In this series of sixty-nine cases we have completely closed the bladder in fifty-nine and used the suprapubic drain in ten.

DISCUSSION

DR. JOHN BUTLER, Minneapolis: Recently there has been considerable difference of opinion as to what has been removed and what is left behind after so-called prostatectomy. Freyer and others are of the opinion that the gland is removed *in toto*, whereas Zuckerkandl and others seem to agree that only the median lobe is hypertrophied; that all tissue anterior to the ductus deferens makes up what is known as the median lobe; that it is the only part of the prostate which is hypertrophied. All tissue posterior to the ductus deferens shares in part in the hypertrophy, but the anterior and posterior lobes through pressure of the hypertrophied median lobe forms the so-called capsule of the prostate. The muscular fibers in the hypertrophied portion are left after prostatectomy. Thus so-called prostatectomy is simply an interglandular enucleation of the median lobe of the prostate.

DR. F. J. PLONDKE, St. Paul: The mortality rate is not due to the operation *per se*. The time-element is a thing we must consider, whether we do the suprapubic or perineal operation. We must give as little of the anesthetic as possible. These patients are bad subjects for anesthesia, and that of itself is an argument in favor of the perineal operation. In an experience comprising twenty-five cases I have found the perineal operation satisfactory. I have had but one experience with the suprapubic operation.

DR. FRANK WRIGHT, Minneapolis: The mortality of prostatectomy is only a relative term. The surgeon who operates on patients greatly advanced in years will have a much higher mortality than the man who operates on patients who are much younger. I saw Zuckerkandl do seventy-two perineal prostatectomies with spinal anesthesia without a death. He said that if there is any mortality from perineal prostatectomy, it is due to the anesthetic. It is dangerous to give a man over seventy years of age an anesthetic for any length of time on account of lack of elimination or kidney insufficiency.

DR. J. W. ANDREWS, Mankato: I favor the suprapubic operation. For a number of years I resorted to the perineal operation, but 33⅓ per cent. of the patients would come back complaining of having to get up too often at night to pass urine, and they complained of frequent urination during the day. I finally undertook the suprapubic operation, and not a single patient operated on by this method has had urinary trouble following the operation.

DR. ARTHUR C. STRACKAUER, Minneapolis: The mortality following prostatectomy is largely due to shock, pneumonia and kidney insufficiency. I would emphasize the great importance of ascertaining the condition of the kidneys before operation and more so cystoscopic examination. Some of these cases should be given suprapubic drainage and irrigated for a long time.

Intestinal Stasis With Special Reference to Lane's Short Circuiting Operation

DR. ROBERT O. EARL, St. Paul: From my experience with five cases of ileosigmoidostomy I am of the opinion that the colon should be removed at least to the splenic flexure in all cases in which ileosigmoidostomy is indicated, provided the patient's condition permits the extra operative procedure. All of the patients were relieved of their obstinate constipation. No patient was operated because of constipation but for the relief of definite symptoms of severe auto-intoxication which refused to yield to other treatment. The stools were diarrheal in character and rather frequent the first two to four weeks only, after which the stools have been soft and satisfactory except in the two cases in which the colon contains the fecal masses. In these cases the stools are soft with hard lumps. None complained of an excessive thirst. Considering the fact that most patients who are subjected to short circuiting operations are physical wrecks enduring a miserable existence, the results are good. I advise ileosigmoidostomy with colectomy only after non-surgical treatment has failed and when a less formidable operation does not promise relief.

DISCUSSION

DR. T. W. STUMM, St. Paul: I think we are prone to attach too much importance to auto-intoxication from the intestinal tract. There are doubtless cases in which we do have auto-intoxication from the intestine where there is some definite pathologic process back of it, in which there was true organic obstruction. For instance, around the splenic flexure of the colon there may be some trouble in those cases in which the mucous membrane has been injured in some way, so that absorption can go on much more readily than it could otherwise; but in ordinary cases of constipation, unless there is some pathologic condition existing in the way of adhesions or some inflammatory condition that exists back of it, I do not see the necessity of performing the operation described.

Work of the Public Health Education Committee of the American Medical Association and Its Relation to the State and County Societies

DR. LAURA A. LANE, Northfield: We are trying, first, to establish a committee for public health education in every county in the state where a regular standing committee on this work does not exist; second, to arrange for a series of public lectures in the larger cities and towns of the state; third, to urge the larger hospitals in the state to become centers of education in the prevention of disease; fourth, to establish a Health Day in the public schools; to urge on teachers and parents the importance of medical inspection in the schools; to secure the cooperation of the parents and schools in obtaining proper instruction of the young in practical hygiene and in sex hygiene; to secure regular courses in practical hygiene in our colleges and higher institutions of learning; fifth, to secure traveling libraries on hygiene and sanitation for rural communities; sixth, to provide health talks on the programs of teachers' institutes, farmers' institutes, and to foster the extension of rest rooms in rural towns for the farmers' wives.

DISCUSSION

DR. J. P. SEDGWICK, Minneapolis: We are not doing justice to the women members of our association if we do not heartily support this very excellent movement.

DR. S. M. WHITE, Minneapolis: The work of this committee is very much more important than we realize, for the reason that the American Medical Association, and through it the American medical profession is definitely committed to the propaganda of health education among the public.

DR. MARY S. WHETSTONE, Minneapolis: I want to emphasize one suggestion Dr. Lane made, and that is, for the county physicians who have hospitals in the various towns to cooperate with this committee and have lectures emanate from the hospitals, thus reaching patients in the hospitals, who come from the various rural districts, giving them the needed instruction, as well as extending an invitation to the laity in the towns in which the hospitals are located to come and listen to the lectures. In this way we can improve the opportunity to disseminate the knowledge which it has been suggested should come from the physician, and maintain the hold which we have on the confidence of the people.

Surgery of the Gall-Bladder and Ducts

DR. ROLLO C. DUGAN, Eyota: That gall-stones are the end-result of an infection of the gall-tract is now well recognized, but how to prevent this infection is not so clear. In the cases of gall-bladder disease in which I have operated, in persons who have been under my personal observation for fifteen or twenty years, the story has been about the same as in those who have come to me from other sources. I have not been able, except in one or two cases that have had typhoid, to decide when the infection took place that resulted in the gall-stones unless possibly influenza was the first offender, creating a condition of lessened resistance to the colon bacillus, the probable immediate cause. That a large number of so-called dyspepsias are cases of latent gall-stones has been emphasized by Murphy and Mayo. Murphy has called attention to the increased mortality in cases of stone in the common duct with fever in comparison to the same condition with the stone confined to the gall-bladder, and explains it by the fact that the duct is very much richer in lymphatics than the gall-bladder, thus increasing the constitutional poisoning. In the past we have not sufficiently emphasize the danger of delay. Murphy's dictum as to appendicitis is practically as applicable here, that the time to operate is "now," just as soon as the diagnosis is made.

DISCUSSION

DR. E. S. JUDD, Rochester: There is very little place for the medical treatment of gall-stones. It is purely a surgical condition when the diagnosis is made. Going beyond the condition of gall-stones, there is a condition of cholecystitis or inflammation in the gall-bladder without stone. It is a history which differs from gall-stone disease, in that the trouble does not come on in the form of a colic, but is more apt to be in the nature of a constant pain in the region of the gall-bladder. When the abdomen is opened this condition of cholecystitis is first found. The gall-bladder is tense and cannot be collapsed by ordinary pressure. Sometimes it requires two or three minutes pressure before the gall-bladder can be made to collapse, and figuring that the cystic duct has a movement of one-eighth of an inch and the common duct a movement of one-sixth of an inch, it takes minutes to press the bile out. If you cannot press out the bile, there is cholecystitis or inflammation of the gall-bladder.

DR. A. W. IDE, Brainerd: I desire to mention a case of gall-stones in a child, four years and one month old. The child had typhoid, which ran a mild course, about a year and a half previous to the onset of the gall-stone trouble. The child had quite a severe attack of abdominal colic. At first we made a diagnosis of appendicitis and operated. On opening the abdomen the appendix was found not seriously diseased, but the gall-bladder was distended and could not be emptied by pressure. On opening the gall-bladder quite a large quantity of bile was removed.

Abdominal Incisions

DR. R. E. FARR, Minneapolis: The transverse division of the rectus will give the operator the best chance to handle every conceivable form of pathology within the abdomen, with the possible exception of large solid tumors, with more convenience and speed and less retraction and handling of tissues with resulting trauma and shock, than will the classic method. It is perfectly safe to divide the muscle transversely. In the procedure of Pfannenstiel we have a rational, safe and convenient method of opening the lower abdomen which appears to have certain advantages over the vertical method and is worthy of more general use.

DISCUSSION

DR. A. W. ABBOTT, Minneapolis: There is one condition in which I dislike to use the Pfannenstiel incision, and that is in cases in which infection of the wound is inevitable. In

those cases in which the flap has been raised up so much, there is likely to be infection extending up the whole length of the part that is turned up with the development of an abscess there. I had one experience of that kind and since then have avoided this incision. It is true, in those cases you can make the incision clear through the muscle, go directly through everything, and you get a good chance for drainage in case any part of the wound should become involved.

DR. F. J. PLONDKE, St. Paul: In gall-bladder cases, where we find it necessary to do a cystectomy, it is necessary, in addition to a vertical incision, to make a transverse incision. In those cases I think the incision that has been described is applicable, and it is a good thing to know we can do that without any great harm.

DR. E. R. HARE, Minneapolis: The character of the incision should depend largely on the nerve supply in the abdominal wall, for if we destroy the nerve supply we may have apparent or perfect healing for the time being, but later on there will be degeneration of the muscle involved in the incision, which will permit of a hernia following operative interference. The abdominal muscles are supplied by the intercostal, and in the upper third of the abdomen the intercostals pass inward and upward; in the middle third they pass transversely toward the center, and in the lower third they pass inward and downward, and we can adapt the transverse incision very nicely to the direction of these nerves and not involve the nerve supply of the muscles.

Vaginal Cesarean Section in Cases of Eclampsia, Placenta Prævia, Pernicious Vomiting and in Hemorrhage Due to Premature Separation of the Placenta

DR. H. C. COONEY, Princeton: Of the three women on whom I operated for eclampsia, one was advanced seven months in gestation and in labor; the other two were without pains; all were in coma, one so profound that no anesthetic was given. Ether and morphin were used in two cases. All of the mothers survived, and two of the infants. The seven months' fetus was asphyxiated at delivery; there were two patients with marginal placenta prævia advanced to the eighth and eighth and one-half month respectively; both had suffered repeated hemorrhages, and were operated on by this route, one during the interval between bleedings, and one during a rather severe hemorrhage; she was almost exsanguinated when seen, and made a tedious convalescence, which was complicated by a left femoral phlebitis. Both mothers and both infants survived. The remaining patient of this group operated on by this method was a much exhausted woman, the operations being done for the relief of toxemia of pregnancy with long continued and persistent emesis. She recovered from the operation without incident. Previous experience in similar cases with Bossi's dilator, which, even in expert hands I regard as a dangerous instrument, has induced me to discard it, together with the Champetier de Ribes bag, when the condition of the pregnant woman is such as in the cases whose clinical histories I have briefly outlined.

DISCUSSION

DR. A. W. ABBOTT, Minneapolis: There are certain cases in which I believe this operation is applicable, and those are the patients that have been mauled around by midwives and have been neglected until they have become septic. As to its value in the vomiting of pregnancy, it is not frequently demanded. There is only one suggestion I would make in reference to the technic of the operation, and that is one need not be afraid to cut the uterus, but let it tear, either that, or go through the perineum.

DR. B. W. KELLEY, Aitken: As to the necessity for rapid delivery, I will say that in a series of several hundred cases in which statistics were obtained, it was found, contrary to the general belief, that the mortality in these cases where forced delivery was resorted to was practically the same as that in which forced delivery had not been performed. The principal benefit to be obtained from rapid delivery or from forced delivery is the blood-flow from the mother, and we obtain in that way practically the same results that we would from venesection.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

August, IV, No. 2, pp. 65-127

1. History of Classification of Gastro-Intestinal Diseases in Ancient and Modern Times. I. A. Abt, Chicago.
2. *Studies in Bacteriology of Acute Intestinal Diseases of Infancy. B. S. Veeder, St. Louis, and R. Kilduffe and O. T. Denny, Philadelphia.
3. *Polycarbohydrates in Diet of Young Infant. J. M. Brady, St. Louis.
4. Appendicitis in Childhood. R. S. Fowler, Brooklyn.

2. **Bacteriology of Acute Intestinal Diseases of Infancy.**—The authors hold that the mere presence of a few dysentery organisms in a case of acute intestinal disturbance in an infant does not in itself prove that the organisms have any etiologic relation to the condition. It is only in the severe cases of ileocolitis that the dysentery organisms are present in the stools as one of the predominating types of organisms and it is these cases which show distinctive lesions of dysentery at autopsy. In only about 20 per cent. of the cases of ileocolitis occurring in infancy are dysentery organisms found. While in some of these cases the infection with dysentery organisms is primary, in others it is probably secondary. The cases of ileocolitis in which dysentery organisms are present cannot be separated clinically from those in which they are absent. Streptococci are present in the stools of about 80 per cent. of the cases of ileocolitis. While in the majority of these cases the relation is unimportant, it is probable that in some instances the organisms have a distinct relationship in the etiology of the condition.

Out of nearly 100 cases examined during the summer they found but one with the *B. aerogenes capsulatus* and developing a growth in milk heated to 80 C. This child was placed on raw buttermilk, but died three days later. The gas formation, growth and sediments in the dextrose and lactose fermentation tubes varied to such a marked degree in different cases showing the same types of predominating organisms and in individual cases without apparent relation to the clinical condition or changes, that in reality this part of the study gave very little useful information. The same was the case with the growth on and liquefaction of gelatin plates.

3. **Polycarbohydrates in Diet of Infant.**—For over a period of eighteen months the authors have used the following mixture as the routine formula for new-born infants: One and one-half ounces by measure of barley flour is cooked with 16 ounces of water at least twenty minutes down to 10 ounces, and added to 20 ounces of skim sweet or acidified milk. The latter we believe for many reasons is preferable in an institution. One-half ounce by measure of cane sugar and 1 ounce by measure of malted food containing dextrin and maltose are added. The carbohydrate content of the mixture would be represented by lactose 2.66, cane sugar 1.30, maltose and dextrin, 1.70, plus barley, 2.25, which is partly-dextrinized. This gives a total carbohydrate percentage of 7.91. One liter has a caloric value of 415.

One hundred and seventy babies were cared for; ninety babies received breast milk for the first two weeks of life, and then received this mixture. Forty-five received this mixture from birth; eighteen were between 2 and 3 months of age and seventeen, owing to nutritional disturbances, were on Eiweissmilch; these received this mixture after completion of the Eiweissmilch cure. During this period there was a remarkable absence of babies with nutritional disturbances; the stools were uniformly of good color and consistency. No infant on this mixture in this series developed the symptom-complex described by Finkelstein under the caption alimentary intoxication, nor did symptoms arise which could be interpreted as Mehlnährschaden (starch injury) in the sense of Czerny and Keller. Twelve babies did not show a satisfactory gain, so they were transferred to Eiweissmilch. All the other babies throve satisfactorily, the fat percentage alone requiring alteration. Eighteen babies died, a mortality of 10.5 per cent. The

causes of death were as follows: two sudden deaths, nutrition good; autopsy showed enlarged thymus; one, premature birth; one, congenital syphilis; seven, acute bronchopneumonia, nutrition good; one phlegmon of the scalp; and six, decomposition (Finkelstein). Brady concludes that mixtures of milk, water and lactose with fat, protein and carbohydrate in the percentage corresponding to the widely accepted principles of infant-feeding do not give satisfactory results in an infant asylum. The asylum infant, even in the early weeks, is greatly assisted in making gains and weathering the unfavorable surroundings by a liberal use of barley, maltose, dextrin and cane-sugar in the diet. The exhibition of polycarbohydrates in the diet is an excellent therapeutic agent for the infant in private practice who refuses to gain on the usual milk mixtures or has already run down on the same. For this diet to be successful the protein must be liberal in amount and special attention must be paid to the fat, which should only be raised with the increase of the weight of the baby. The fear of rickets need not be considered; the first requirement is that the infant be kept alive.

Buffalo Medical Journal

July, LXVII, No. 12, pp. 663-728

5 Acute Pyelitis in Infancy. E. R. Hatch, Buffalo.
6 Facts Concerning Physical Condition of Women During College Life. E. E. Parker, Ithaca, N. Y.
7 Suppurative Labyrinthitis. C. C. Cott, Buffalo.
8 Three Years with the Army of the Potomac. A Personal Military History. W. W. Potter, Buffalo.

American Journal of Medical Sciences, Philadelphia

August, CXLIV, No. 2, pp. 157-312

9 *Clinical Study of a Thousand Cases of Ulcer of Stomach and Duodenum. J. Friedenwald, Baltimore.
10 *Diarrhea of Gastric Origin: Diagnosis and Treatment. D. VanderHoof, Richmond, Va.
11 Multiple Subcutaneous Hemangiomas, Together with Multiple Lipomas, in Enormous Numbers in Otherwise Healthy, Muscular Subject. J. T. Bowen, Boston.
12 Malignant Disease of Lung with Special Reference to Sarcoma: Report of Three Cases. A. A. Stevens, Philadelphia.
13 *Paroxysmal Hemoglobinuria. R. A. Cooke, New York.
14 Case of Delayed Development in Boy Treated with Thymus. C. G. Kerley and S. P. Beebe, New York.
15 Acute Pancreatitis. J. M. King, Los Angeles, Cal.
16 Effect of Cold Air on Circulation in Healthy and Sick Individuals. T. B. Barringer, New York.
17 *Leukocyte and Differential Counts in Ward and Open Air Treatment. T. G. Orr, New York.
18 Fatal Pneumothorax Following Exploratory Puncture. H. Dayton, New York.
19 Tuberculin Therapy in Surgical Tuberculosis. T. W. Hastings, New York.

9. Abstracted in THE JOURNAL, June 22, p. 1945.

10. Diarrhea of Gastric Origin.—For purpose of analysis, Vanderhoof made a statistical study of 500 patients in whom one or more gastric examinations were made. Of these 500 patients, eighty-one, or 16.2 per cent., showed the condition of gastric anacidity, twenty had cancer of the stomach, twenty-two were classified under the term neurosis, five were evident cases of chronic alcoholic gastritis, while the stomach findings in the remainder were associated with or regarded as reflex disturbances from the following conditions: chronic appendicitis, seven cases; cardiovascular disease and lesions of the female pelvic organs, each four cases; cholelithiasis, three cases; pernicious anemia, migraine, pellagra, pulmonary tuberculosis and eyestrain, each two cases; and one case each of hysteria, peritoneal adhesions, benign tumor of stomach, myxedema, chronic influenza and aural vertigo. One of the cases of chronic appendicitis was associated with definite hypothyroidism, and one of the pellagra cases was complicated with intestinal amebiasis. One patient, included above, had a ruptured ectopic pregnancy and pelvic hematocele, and this was accompanied by severe attacks of gastric tetany, with pronounced dilatation of the stomach, ending in recovery.

Diarrhea was a prominent symptom in thirteen of these eighty-one cases, including the two pellagra patients. Excluding these two cases, and the patients with malignant disease of the stomach, there were in the remaining fifty-nine cases of gastric anacidity eleven patients with diarrhea, or approximately 18.5 per cent. These eleven cases form the basis of this article, and most of them occurred in the group of patients in whom no organic cause could be ascertained as being responsible for the anacidity.

The essential point in the treatment of patients with the condition of gastric anacidity, Vanderhoof says, is the administration of large amounts of hydrochloric acid. The usual dose of 10 or 15 drops of the official dilute hydrochloric acid is inefficient. In these cases hydrochloric acid is not to be regarded as a drug. Its administration is for the sole purpose of supplying artificially a substance which the normal stomach secretes regularly and in good quantity. Not only is this acid indispensable for the activation of pepsinogen into pepsin, but on reaching the duodenum it serves as a hormone, or chemical messenger, to initiate the flow of pancreatic secretions. Furthermore, hydrochloric acid may be regarded in a certain sense, as the most effective intestinal antiseptic. The only obstacle presented in the use of this acid is the difficulty of giving it to patients in sufficient amounts. The mucous membranes of the throat will tolerate only weak solutions, hence the necessity of much fluid as a diluent. Vanderhoof, however, prescribes 30 drops of official dilute hydrochloric acid in a full glass of water one-half hour after meals, to be repeated in one-half hour—a total of 180 drops per day.

To stimulate the glands of the stomach to resume their function the most efficient means is the administration of strong meat broths as the first course of the meal, preceded by full doses of tincture of nux vomica. This drug should be pushed to its physiologic limits. In addition to the drinking of broths, consomme, bouillon, beef tea, etc., these patients are encouraged to have their foods well salted, in order that the chlorin supply of the body be ample for the production of hydrochloric acid. If any restriction of the dietary is indicated, undoubtedly the proteins should be the class of foodstuffs to limit in amount. Buttermilk is a specially valuable article of diet in cases of gastric anacidity, and most patients can be induced to consume three pints a day. If the general nutrition is much impaired, associated, as is usually the case, with visceroptosis and possibly motor insufficiency of the stomach, the patient will be much benefited by assuming the recumbent position for an hour after each meal, or may be instructed to lie on the right side. Further treatment may include the wearing of an abdominal supporter, and the employment of the usual measures to combat anemia, nervous states and other conditions which may be not only the result, but as well the contributing cause of a gastric anacidity.

13. Paroxysmal Hemoglobinuria.—The following observations by Cooke are based on experiments with the blood of a typical case of paroxysmal hemoglobinuria. The serum contains a complex hemolysin capable of dissolving the red blood-corpuscles of the individual himself or other individuals by means of the cold-warm experiment. Positive results were obtained in all of the twelve examinations made at different times. Auto-antibody is absorbed from serum in the absence of complement, and on elevation of temperature is more or less completely but slowly dissociated. Complement is absorbed from active serum on exposure to corpuscle in the cold. It will join with antibody after the latter has united with corpuscle, but this union takes place solely under the influence of cold. Corpuscles sensitized with inactive serum show but slight hemolysis on the addition of complement as a result of complementoid inhibition. As a result of clinical observation, the Wassermann reaction, the luetin test, and the serologic studies in metasyphilitic disease, it seems safe to say that syphilis is the most important, possibly the only, etiologic factor in paroxysmal hemoglobinuria, but there are as yet no observations on the presence or absence of hemolysin after the disappearance of the Wassermann reaction as a result of syphilitic treatment.

17. Leukocytes in Ward and Open Air Treatment.—Orr observed that there is no constant change in the total leukocyte or polymorphonuclear counts in afebrile patients when treated in the open air with only the face exposed as compared with counts in the ward. In the majority of patients with fever and leukocytosis there is a small percentage decrease in the total leukocytes when treated in the open air with only the face exposed as compared with the count when treated in the ward. Under like conditions there is no constant change in the polymorphonuclear counts.

Kentucky Medical Journal, Bowling Green

July 15, X, No. 14, pp. 601-634

20 Psychogenesis of Hysteria. C. Pope, Louisville.
21 Pruritis from Medical and Surgical Standpoint. M. L. Ravitch, Louisville.
22 Scarlet Fever. W. Sanders, Louisville.

August 1, X, No. 15, pp. 635-688

23 Antitoxin in Diphtheria and Membranous Croup. I. H. Browne, Winchester.
24 What Must We Do to Be Saved from Temporal Death? D. H. Howerton, Columbia.
25 What Have Health Boards Done for the Country? U. L. Taylor, Columbia.
26 Sanitation and Preventive Medicine. L. F. Hammonds, Dunnville.
27 Pellagra. M. Pennington, Bertha.
28 Dysentery. C. L. Heath, Lindsay.
29 New Therapy of Syphilis. D. H. McKinley, Winchester.
30 Placenta Praevia: Diagnosis and Treatment. T. W. Stone, Bowling Green.
31 Early Diagnosis and Treatment of Arterioselerosis. M. M. Moss, Bowling Green.
32 Ascites: Diagnosis and Treatment. F. E. McCann, Gold City.
33 Clinical Aspects of Anaphylaxis. N. C. Witt, Franklin.
34 Acute Intestinal Obstruction. W. A. Guthrie, Franklin.
35 Dietetics in Typhoid. D. G. Simmons, Adairville.
36 Important Etiologic Factors in Gastro-Intestinal Diseases of Children. C. L. Venable, Franklin.
37 Bronchopneumonia, Capillary Bronchitis, Catarrhal Pneumonia. R. T. Hocker, Arlington.
38 Jaundice. A. P. Dowden, Eminence.

Surgery, Gynecology and Obstetrics, Chicago

August, XV, No. 2, pp. 135-242

39 *Primary and End Results of Fifty-One Radical Abdominal Operations for Cancer of Uterus. R. Peterson, Ann Arbor, Mich.
40 *Radical Abdominal Operation for Carcinoma of Cervix Uteri, with Report of Twenty-Eight Cases. H. C. Taylor, New York.
41 *Prognosis in Radical Abdominal Operation for Uterine Cancer. F. J. Taussig, St. Louis.
42 *Gymnastics and Other Mechanical Means in Treatment of Visceral Prolapse and Its Complications. F. H. Martin, Chicago.
43 Chronic Cystitis of Trigone and Vesical Neck. E. Garceau, Boston.
44* Indications for and Type of Operation to Select in Toxemia of Pregnancy. J. O. Polak, Brooklyn.
45* Treatment of Acute and Fulminant Toxemia. E. P. Davis, Philadelphia.
46 *Treatment of Eclampsia. F. S. Newell, Boston.
47 Prolapse of Uterus. J. M. Baldy, Philadelphia.
48 *Relation of Thyroidism to Toxemia of Pregnancy. G. G. Ward, New York.
49 *Topography of Hypophysis Cerebri. W. S. Gibson, Chicago.
50 Usefulness of Extension Apparatus in Treatment of Fractures of Lower Extremity. W. Hessert, Chicago.
51 Surgical Needles; Pleural Aspirator; Rib Cutting Forceps. J. G. R. Manwaring, Flint, Mich.
52 Method of Securing Catgut on a Needle. F. H. Jett, Terre Haute, Ind.
53 Publotomy. S. D. Jacobson, New York.
54 Electric Desiccation as Adjunct to Surgery, with Special Reference to Treatment of Cancer. W. L. Clark, Philadelphia.
55 Selection of an Anesthetic. I. C. Herb, Chicago.
56 Unusual Indications for Cesarean Operation. J. T. Schell, Philadelphia.

39. Abstracted in THE JOURNAL, July 20, p. 220.

40. **Operation for Carcinoma of Cervix Uteri.**—The conclusions which Taylor has drawn as a result of a study of his own cases and replies to a circular letter which he sent out are as follows: 1. The primary mortality of the radical abdominal operation is not such that it should deter us from doing the operation. 2. The percentage of operability of the cases which come under observation of an operator, by the use of this operation, will be greatly increased over that of those where the simple hysterectomy is done, as was formerly the case. 3. The end results will never compare favorably with the end results reported from abroad, until we are able to get our cases at an earlier stage of the disease, and that our justification for doing such a radical operation is in its moderate mortality and in the relief of symptoms, in a disease otherwise hopeless. 4. Our most promising field of endeavor on the subject of carcinoma of the uterus should be, (a) more reliable and more complete statistics, including, the percentage of operability, the community operability, primary mortality, and also end results; (b) a well regulated organized plan of campaign, in order to get our cases earlier than we do at the present time. This, Taylor believes to be along the three well-known paths, the further and more exact education of the medical profession, a more detailed education of the public at large, and the routine examination of all women after a certain age. It is his belief that until we do these things, our statistics will never compare with those that are reported from abroad, where they have been working along these lines for some years past.

41. **Operation for Uterine Cancer.**—The fact that our percentage of absolute cures is small as compared with German or Austrian statistics, Taussig says, is not due to greater operative mortality or to narrowing the limits of operability. It is not due to lack of boldness or skill on the part of the surgeons but to the character of the material that comes to him for operation. The women are negligent of early symptoms and the average practitioner is careless of diagnosis or inclined to try palliative measures until the disease is too far advanced. The percentage of operability is less than one-half that of the average German clinic. Only by improving the medical training of the men who go into general practice, by the extermination of quacks, and most of all, by the persistent, systematic education of the laity can we ever hope for better results.

42. Abstracted in THE JOURNAL, July 6, p. 58.

44. **Toxemia of Pregnancy.**—Toxic vomiting which resists rest, lavage, dextrose enemata, enteroclysis, and presents a high ammonia ratio or persistent acetonuria and a maternal pulse of 100 or more should, in Polak's opinion, have the pregnancy interrupted. Before the placental formation, the curet is the method of choice; after this period anterior hysterotomy offers decided advantages. The pre-eclamptic state, characterized by its high blood-pressure, diminished urinary output, persistent albuminuria, etc., not yielding to dietetic, eliminative and medicinal measures, justifies evacuation, and surgical methods in skilled hands do less injury, have a lower mortality, and have less morbidity than the less radical procedures. When the convulsions and coma have occurred, the termination of pregnancy improves the chance of the patient's recovery, and the method of delivery depends on the condition of the cervix, which determines whether it be by incision, bag or Nature, supplemented by version or forceps. Anterior hysterotomy should always be the choice over manual dilatation where no effacement of cervix has taken place.

45, 46 and 48. Abstracted in THE JOURNAL, July 13, p. 140.

49. **Topography of Hypophysis Cerebri.**—The following averages were obtained by Gibson from measurements on 107 skulls:

Nasion to sella turcica	62 mm.
Nasion to posterior surface of dorsum sellæ	75 mm.
Anterior nasal spine to sella turcica	78 mm.
Anterior nasal spine to clivus	88 mm.

With a very few exceptions, variations from the averages given above do not exceed 1 cm. Hence the measurements are sufficiently constant to be of practical value. The important variations in the region of the sella turcica with frequency of occurrence are as follows:

Complete or practical absence of sphenoidal sinuses	3 per cent.
Small sphenoidal sinuses	9 per cent.
Thick anterior wall of sella turcica	9 per cent.
No projection of sinuses beneath sella turcica	22 per cent.

In any one of the above variations the fact that the sella turcica does not bulge into the sphenoidal sinuses would make it extremely difficult for the surgeon to determine its exact position.

Thin posterior wall of sphenoidal sinuses, 35 per cent. With only the merest shell of bone protecting the pons, its liability to injury is easily seen. Transverse sphenoidal septum, 2 per cent. Should this septum be mistaken for the floor or roof of the sphenoidal sinuses, the true position of the sella would be obscured. Downward curvature of cribriform plate, 4 per cent. Shallow sella turcica, 8 per cent. The presence of either of the above conditions might cause the surgeon to pass completely beneath the sella. Downward direction of superior surface of sphenoid between optic groove and anterior superior margin of sella turcica, in which optic chiasm would be endangered, 6 per cent. Thirty-four skulls do not present any of the variations cited above, hence offer favorable conditions for approach to the hypophysis.

Illinois Medical Journal, Springfield

August, XXII, No. 2, pp. 139-276

57 Public Care of Insane and Mentally Defective. F. P. Norbury, Springfield.
58 *Clinical Significance of Reflexes. T. B. Throckmorton, Cherokee, Ia.
59 Weil Cobra Venom Reaction in Paresis and Other Psychoses. C. R. Bell, Elgin.
60 Amentia. M. E. Pogue, Lake Geneva, Wis.
61 Binet-Simon Intelligence Tests in Their Application to Defectives. C. H. Town, Lincoln.
62 Prevention of Insanity. W. A. Evans, Chicago.
63 Freud's Psychotherapy. J. Grinker, Chicago.
64 Musculospiral Paralysis; Spindle-Celled Sarcoma of Arm. E. Friend, Chicago.
65 *Orthostatic Albuminuria. E. J. Brown, Decatur.
66 Steel Splint in Treatment of Fractures. O. L. Pelton, Elgin.
67 Profuse Hemorrhages from Urinary Tract. H. L. Kretschmer, Chicago.
68 Problems of Pelvic Surgery. G. deTarnowsky, Chicago.
69 Dangers Connected with Pregnancy. M. J. Kearsley, Chicago.
70 Undergraduate Life and Early Medical Work of Alexander Hugh Ferguson. A. McDermid, Chicago.

58. Clinical Significance of Reflexes.—Aside from extensor toe phenomena, Throckmorton says, the absence or presence of a single reflex phenomenon does not necessarily warrant the making of a positive diagnosis of a nervous disorder, but rather in arriving at a definite conclusion, the entire clinical picture as manifested by the association of symptoms, physical and clinical findings, supplemented by a complete history should always be the determining factors. For instance, the diagnosis of tabes dorsalis should never be made on the absence of the knee-jerk, unless it is also accompanied by other cardinal symptoms as visceral crises, lightning pains, ataxia, Argyll Robertson pupil, vesical disturbances, etc. Indeed, it has been contended that it is unwise to make a positive diagnosis of either tabes or paresis unless the pupillary findings are positive of these disorders. Unfortunately from a diagnostic standpoint, there are no constant changes in the reflexes accompanying mental disorders. General paralysis of the insane perhaps affords the most constant changes in reflex activity of any of the forms of insanity, but it must be remembered that in this disorder we are dealing with an organic affection since pathologic changes in nervous tissue can be demonstrated. The tendon-reflexes are variable; they may be normal, plus or minus. The pupillary findings are more constant and characteristic. Early there may be disturbance of the consensual reflex; inequality and irregularity in outline of the irides is often present, and, as previously mentioned, the change from time to time in the position of the irregularity denotes the oncoming loss of light reaction. However, the loss to light reaction is also found in tabes and in old syphilis of the central nervous system, which goes to show the necessity of having other clinical evidence besides a single reflex, no matter how pronounced that reflex may be, before making a positive diagnosis of a nervous disorder.

As a general statement, Throckmorton thinks it may be said that the deep reflexes are usually diminished in those mental disorders which are depressive in character, and increased in excitive and exalted mental states. Finally, as a means of making a differential diagnosis between organic and the so-called functional disorders, the presence of an extensor toe-reflex, of which type the Babinski phenomenon is classical, is conclusive evidence in that such a finding always denotes an organic disease of the nervous system. Persistent ankle-clonus in association with a plus knee-jerk is also a good indication of an organic motor lesion.

65. Abstracted in THE JOURNAL, June 8, p. 1777.

Journal of Oklahoma State Medical Associationn, Muskogee

August, V, No. 3, pp. 81-124

71 Gastric Indigestion. F. J. Wilkiemyer, Muskogee.
72 Intestinal Indigestion. F. W. Ewing, Terral.
73 Enteroptosis as Factor in Indigestion. H. P. Wilson, Wynnewood.
74 Digestive Disturbances of Gastric and Duodenal Ulcer. A. L. Blesh, Oklahoma City.
75 Diseases of Gall-Bladder and Pancreas As Factors in Indigestion. L. Long, McAlester.
76 Digestion as Affected by Chronic Appendicitis or Why Does Chronic Appendicitis Affect Digestion? M. Smith, Oklahoma City.
77 Pellagra. C. R. Hume, Anadarko.
78 Eclectic Lightning Bug Convention. J. M. Alford, Oklahoma City.
79 Advantages of Combined Local and General Anesthesia in Abdominal Operations. L. F. Watson, Oklahoma City.

Archives of Pediatrics, New York

July, XXIX, No. 7, pp. 481-560

80 Unusual Cases of Narrowing Esophagus in Childhood. J. L. Morse, Boston.
81 Treatment of Scarlet Fever. L. Fischer, New York.
82 *Administration of Bichlorid of Mercury to Mother, for Its Effect on Digestive Function of Nursling. S. V. Haas, New York.
83 Common Errors in Diet After First Year. R. H. Dennett, New York.
84 Administration of Anesthetics in Infants and Children. T. W. Kilmer, New York.
85 Urethral Calculi. J. Speese, Philadelphia.
86 Vitiligo, with Report of Case Appearing Two Weeks After Attack of Scarlet Fever. H. K. Hill, Philadelphia.

82. Administration of Bichlorid of Mercury.—Eight years ago Haas began to test the value of the administration of bichlorid of mercury in the treatment of congenital syphilis among the cases occurring in the pediatric service of Holt at the Vanderbilt Clinic. It was found that the effect on the specific process, though positive, was slight, whereas, gastro-intestinal and nutritional disturbances when present, cleared up in a most remarkable manner. By way of illustration: An infant 6 weeks of age, anemic, with marked desquamation, rugæ, snuffles, large liver and spleen, birth weight 6½ pounds, present weight 7 pounds, has had numerous green mucous stools since birth, although breast fed. The mother was given bichlorid of mercury, 1/32 of a grain, three times a day; when seen forty-eight hours later, the stools were yellow, no mucus, the syphilitic process unchanged. After a week, however, this too showed slight improvement. A gain in weight of a half pound was registered. No other changes had been made in regimen of mother or infant.

After noting the regularity with which this occvurred in patients suffering from congenital syphilis, it was decided to test its value in gastro-intestinal disturbances among non-specific nurslings. The result was most encouraging. Between 35 and 40 per cent. of the patients were benefited; no harm resulted even in those patients who had not improved. The drug was administered in more than 200 cases. The dose, excepting in the earlier cases, was tablet triturate of bichlorid of mercury, 1/32 of a grain, administered to the mother three times a day after meals. The cases were not selected. Any nursling not prospering was considered a good subject. The effect on the mother of a syphilitic child was positive, rapid and striking, the general tone and color improving visibly. On the non-specific mother the effect was sometimes that of a general tonic, but in most cases no effect was observed. In a few cases the mother lost weight. The effect on the quantity of milk supplied, according to the statements made by the mothers, varied within wide limits. Usually there was an increased secretion; in some cases no change, and in a few cases a distinct diminution in the supply. The quality of the milk would appear to have been improved. In a number of instances, in which, under poor advice, nursing had been discontinued, and the milk had practically disappeared, it was possible to reestablish the function, in one case, after twelve weeks. It seemed that the mercury was of some assistance in these cases, although this is not at all certain, since we know that the function can be reestablished by simply permitting nursing to be resumed.

Maryland Medical Journal, Baltimore

August, LV, No. 8, pp. 183-208

87 Triumphs of Preventive Medicine. T. L. Rhoads, U. S. A.
88 Typhoid and Way to Prevent It. C. W. G. Rohrer, Baltimore

Texas State Journal of Medicine, Fort Worth

August, VIII, No. 4, pp. 107-132

89 Hygiene and Preventive Medicine in the South. I. Dyer, New Orleans, La.
90 Newer Methods of Diagnosis of Pathologic Conditions of Liver. I. C. Chase, Fort Worth.
91 *Improved Operation for Prolapsus Uteri, with Report and Results. C. S. Venable, San Antonio.
92 Narcolepsy. S. C. Parsons, San Angelo.
93 Comparative Study of Practice of Medicine and Surgery in Mexico and in United States. L. H. Hoffman, Hobart, Okla.

91. Operation for Prolapsus Uteri.—Venable's operation consists in a looping of the broad ligaments in their perpendicular axis behind the body of the uterus, where they are made fast. The result of this procedure is to lift the uterus and adnexa from the deep pelvis; to tighten the sacro-uterine ligaments;

to shorten the round ligaments thereby tilting the fundus of the uterus forward, and last, but not by any means least, to reestablish intra-abdominal pressure in the normal plane.

Journal-Lancet, Minneapolis

August 1, XXXII, No. 15, pp. 395-422

94 Sporotrichosis: Report of Case. G. S. Adams, Yankton, S. D.
95 General Practitioner: Present Status and Future Prospect. C. Johnson, Willmar, Minn.
96 Abortive Treatment of Acute Gonorrheal Epididymitis. O. Owre, Minneapolis.
97 Health Supervision of Schools. J. G. Parsons, Sioux Falls, S. D.
98 Rôle Played by Sexual Organs of Women in Production of Backache. J. L. Rothrock, St. Paul.
99 Foreign Body Removed from Bifurcation of Trachea by Lower Bronchoscopy. E. W. Benham, Minkato, Minn.

Journal of Biological Chemistry, Baltimore

August, XII, No. 2, pp. 163-312

100 Non-Enzymatic Character of Oöcytin (Oöcytase). T. B. Robertson, Los Angeles.
101 Hydantoins: Synthesis of Thiotyrosin. T. B. Johnson and C. A. Brautlecht, New Haven, Conn.
102 Modification of Ritter's Method for Quantitative Estimation of Cholesterol. H. J. Corper, Chicago.
103 Hydantoins: New Method for Synthesis of Phenylalanin. T. B. Johnson and W. B. O'Briem, New Haven, Conn.
104 Studies in Bacterial Metabolism. A. I. Kendall, C. J. Farmer, E. P. Bagg and A. A. Day, Boston.
105 Idem. A. I. Kendall and C. J. Farmer, Boston.
106 Influence of Glutaric Acid on Phlorhizin Glycosuria. A. I. Ringer, Philadelphia.
107 Autolysis of Mold Cultures. A. W. Dox and L. Maynard.
108 Comparison of Paranuclein Split from Casein with Synthetic Paranuclein, Based on Immunity Reactions. F. P. Gay and T. B. Robertson, Los Angeles.
109 Phosphotungstic-Phosphomolybdic Compounds as Color Reagents. O. Folin and W. Denis, Boston.
110 Tyrosin in Proteins as Determined by New Colorimetric Method. O. Folin and W. Denis, Boston.
111 *Protein Metabolism from Standpoint of Blood and Tissue Analysis. Absorption from Large Intestine. O. Folin and W. Denis, Boston.
112 *Idem. Absorption from Stomach. O. Folin and W. Denis, Boston.
113 Action of Leukocytes on Glucose. P. A. Levene and G. M. Meyer, New York.
114 Quantitative Determination of Aliphatic Amino Groups. D. D. Van Slyke, New York.
115 Composition and Properties of Glycocoll Picrate and Separation of Glycocoll from Alanin. P. A. Levene and D. D. Van Slyke, New York.
116 *Conditions for Complete Hydrolysis of Proteins. D. D. Van Slyke, New York.
117 Gasometric Determination of Free and Conjugated Amino-Acids in Urine. P. A. Levene and D. D. Van Slyke, New York.

111. **Absorption from Large Intestine.**—The author's experiments show that while the absorption from the large intestine is not nearly so rapid as from the small intestine, it is rapid enough to cause an appreciable accumulation of the absorbed products in the blood.

112. **Absorption from Stomach.**—The results in these experiments prove that nitrogenous digestion products are absorbed from the stomach.

116. **Complete Hydrolysis of Proteins.**—Van Slyke found that the percentage of amino nitrogen reaches a definite maximum when acid hydrolysis of a protein is complete, and this maximum is the same whether the hydrolysis occurs at 100 or at 150 C. Approximately the same results are obtained by heating at 100 C. with 20 per cent. hydrochloric acid for forty-eight hours as by heating in an autoclave with 3n acid for one and one-half hours. At 100 C. the amino nitrogen reached its maximum within ten hours in no case, but within twenty-four hours in every case, except that of gluten, which showed a small but definite increase (2.4 per cent.) during the second twenty-four-hour period. The ammonia, does not reach an absolutely definite maximum, but increases the longer hydrolysis is continued. At 150 C., prolonging the hydrolysis beyond one and one-half hours, caused, in the cases of three of the six proteins, an increase of 2.5 to 4.5 per cent. in the ammonia nitrogen. At 160 C. the increase of ammonia is still more marked and occurs at the expense of the amino nitrogen. There is much less tendency towards deaminization at 100 C.; the second twenty-four-hour period caused an increase of over 0.8 per cent. in the ammonia only in the case of egg albumin (1.7 per cent.). That any of the other natural amino-acids are deaminized to an appreciable extent, unless heated under pressure, appears doubtful to Van Slyke. That the ammonia, or "amide nitrogen," arises chiefly from the acid amid groups of the asparagin and glutamin in the protein molecule, he says, is consistent with all present results.

Annals of Ophthalmology, St. Louis

July, XXI, No. 3, pp. 447-667

118 Simple Senile Cataract Extraction with Incision of Root of Iris. A. Elschnig, Prague.
119 Another Case of Chloroma. A. J. Bedell, Albany.
120 Early Symptoms and Ocular Findings in Cerebral Tumor. O. Wilkinson, Washington.
121 Secondary Glaucoma in Interstitial Keratitis, with Report of Case. E. A. Shumway, Philadelphia.
122 Sympathetic Ophthalmia. F. Deutschmann, Hamburg.
123 Congenital Absence of Both Lower Puncta, Lifelong (Double) Dacryocystitis, Apparent Cure from Dacryocystorhinostomy. W. H. Luedde, St. Louis.
124 Submucous Dacryocystorhinostomy for Persistent Dacryocystitis. W. M. C. Bryan, St. Louis.

Journal of Nervous and Mental Disease, Lancaster, Pa.

August, XXXIX, No. 8, pp. 505-576

125 *Pseudo-Bulbar Palsy, Clinically and Pathologically Considered, with Clinical Report of Five Cases. F. Tilney and J. F. Morrison, New York.
126 Alzheimer's Disease (Senium Praecox): Report of a Case and Review of Published Cases. S. C. Fuller, Westborough, Mass.

125. **Pseudobulbar Palsy.**—This paper is based on an analysis of 178 cases: In 88 per cent. of cases the onset is sudden; in 67 per cent. consciousness is lost during the onset. The cranial innervations are involved as one of the initial symptoms in 80 per cent. of cases. Hemiplegia occurs, among the first disturbances, in 62 per cent. A defect in speech is the most common of the initial bulbar symptoms. This occurs in 68 per cent. of cases. Twenty-four per cent. of cases present no bulbar involvement among the first symptoms. The patients who are stricken suddenly usually have subsequent attacks of a similar character. Seventy-three per cent. of patients have more than one attack. The length of the interval between attacks varies within wide limits from a few days to twelve years. The average length of interval between the first and second attacks is eighteen months; between the second and third attacks twelve months; between the third and fourth, thirteen months; between the fourth and fifth, six months.

Another characteristic feature in the course of the disease is the tendency of the paralysis to change its distribution at each successive attack. In 8 per cent. of the cases the paralysis did not shift at all. Of the cases having three attacks only 9 per cent. showed no shifting of the paralysis. In the remaining 91 per cent. the combinations were so varied as to make tabulation impracticable. The paralysis of the cases having but one attack is bulbar alone in 25 per cent.; bulbar and hemiplegic in 68 per cent.; bulbar and paraplegic in 7 per cent.

The most prominent of the bulbar symptoms is the speech defect. It occurs in every case. Paralysis of the facial musculature is a conspicuous bulbar symptom. It is usually a bilateral prosopoplegia with one side slightly more involved than the other. It occurs in 81 per cent. of cases. Paralysis of the palatine and pharyngeal muscles occurs in 97 per cent. of cases. In 2 per cent. no statement was made in this particular and in 1 per cent. the muscles were not involved. Dysphagia is present in 69 per cent. of cases. In some instances patients are able to swallow only semi-solid foods. Deglutition is always slow and often interrupted by attacks of coughing or regurgitation of fluid through the nose. This disturbance is more marked in the severer cases and in all cases immediately after the acute attack. The laryngeal muscles are less frequently involved. Paralysis in this group occurs in 16 per cent. of cases. The muscles of mastication are affected in 17 per cent. of cases. As a rule, the disturbance is a voluntary paralysis; there is no atrophy in the muscles, and the jaw-jerk is always active. Both sides are usually involved with the loss of power somewhat more marked on one side than the other. Paralysis of the muscles of the eyeball occurs in 16 per cent. of cases and is generally unilateral.

The emotional tone of the individual undergoes a marked change in 50 per cent. of cases. Crying spells occur in a large number of cases. In their general character they resemble the laughing fits. The mental status is disturbed in something

more than one-quarter of the cases. Twenty-four per cent. of these cases are demented, 2 per cent. are maniacal and 3 per cent. imbecilic. The general body sensation and special senses are rarely affected. In all, only fourteen cases showed any involvement of the sensorium; six of these presented a typical hemianesthesia. Salivation is mentioned in connection with 37 per cent. of cases. The reflexes, in only one case, were described as being reduced. Four cases presented athetosis and two had marked chorea. A few cases are reported in which the muscles of some part of the body have atrophied. No record of the reaction of degeneration was found in any of the cases considered in this analysis.

In 79 per cent. of cases the lesions were bilateral. Of these, 84 per cent., in addition to bulbar symptoms, presented an involvement of both sides of the body at some period during the course of the disease. In the remaining 16 per cent. only one side of the body was affected. Twenty-one per cent. of cases showed unilateral lesions yet in about one-tenth of these the extremities of either side were paralyzed at some time. The lesions are usually multiple, but the topographic combinations in which they occur are so variable as to make tabulation impossible. In 52 per cent. of cases some part of the cerebral cortex was involved. The corpus striatum, in some portion or all parts, was affected in 60 per cent. of cases; the basal ganglia, including the lenticular nucleus, caudate nucleus, and optic thalamus, presented one or more lesions in 73 per cent. of cases. The fact that 27 per cent. of cases had no lesion in any part of the basal ganglia makes it incorrect to state that the essential lesion of the disease is in this region. A strikingly large number of cases have records of lesions in the medulla or pons or both together (36 per cent.). About one-half of such cases had pathologic foci involving one or more of the cranial nerve nuclei.

The deductions based on the analysis of the post-mortem reports seem to absolve the optic thalamus and corpus striatum of any responsibility for the characteristic laughing and crying spells or the changes in mimetic expression so frequently seen in pseudobulbar palsy. Over one-half of the cases, which, according to report, present no lesions in the lenticular nucleus, caudate nucleus or thalamus, have clinical records of typical laughing or crying attacks, while one-half of those cases with lesions in the lenticular nucleus, caudate nucleus or thalamus have no clinical records of such attacks.

Ophthalmic Record, Chicago

July, XXI, No. 7, pp. 331-390

127 Removal of Spindle-Cell Sarcoma from Right Orbit. Recovery with Intact Ocular Apparatus. F. Allport, Chicago.
128 Keratotomy for Removal of Corneal Scars and Opacities. G. B. Jobson, Franklin, Pa.
129 Anomalies of Refraction and Their Relation to Abnormalities of Ocular Balance. S. D. Risley, Philadelphia.
130 Thyroid with Arsenic and Its Associated Internal Secretions in Diseases of Eyes. S. B. Muncaster, Washington, D. C.
131 Treatment of Detachment of Retina. G. C. Savage, Nashville, Tenn.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

August, LXVI, No. 416, pp. 169-340

132 Extended Abdominal Operation for Carcinoma Uteri. E. Werthelm, Vienna.
133 *Management of Occiput Posterior Positions. F. W. Rice, New York.
134 Some Reflections After Twenty-Five Years of Private Practice in Obstetrics. H. J. Kreutzmann, San Francisco.
135 Menstruation, Normal and Abnormal. J. R. B. Branch, Macon, Ga.
136 Pregnancy in a Bicornate Uterus. W. J. Frick and G. C. Mosher, Kansas City, Kan.
137* Treatment of Summer Diarrheas. H. Heiman, New York.
138 Treatment of Acute Stages of Poliomyelitis Before Appearance of Paralysis. J. V. Manning, Brooklyn.

133. Occiput Posterior Positions.—The prolonged labor in occiput posterior positions, Rice says, is due to early rupture of membranes and maldirection of force. Prolonged labor is more common in primiparas. In primiparas with vertex presentation, early rupture of membranes is a very suggestive sign of occiput posterior positions. In occiput posterior with poor flexion spontaneous delivery can only occur after a long labor with strong pains. In multiparas relaxed pelvic floor is often a frequent cause of delayed rotation. In primiparas early rupture of membranes is the principal cause of delayed rotation. In primiparas early rupture of membranes is the principal cause of prolonged labor. Double application of forceps offers the best methods of delivery where the head is high in the pelvis. With floating head, if not contra-indicated, version offers the best solution in a flat pelvis. With head low in pelvis, partial rotation by the blades is the best method.

137. Treatment of Summer Diarrheas.—The milder cases of diarrhea which belong to the non-inflammatory type of the stage of dyspepsia (Finkelstein), Heiman says, require little else but initial catharsis consisting of castor-oil or milk of magnesia and abstention from milk for a period of twenty-four or forty-eight hours. After cessation of the diarrhea diluted skim milk, barley water and sugar may be given in gradually increasing quantities. In most of the cases astringents are unnecessary. If, however, the diarrhea persists after the thorough removal of the decomposed food product from the intestinal tract, 5 to 10 grains of bismuth in mucilage of acacia at intervals of one to two hours is indicated. If abdominal pain, cramps, restlessness or watery diarrhea is present, five or ten drops of paregoric may be added. While these mild cases of dyspepsia (Finkelstein) in the early stages offer a grateful field for therapeutic activity, it is far otherwise with the severer forms of decomposition and intoxication. These not infrequently present difficult problems to the clinician, as with the rather prolonged starvation which is indicated the general condition becomes so enfeebled that the danger of collapse is imminent.

The urgent need of a mode of treatment which, while it ameliorates the gastro-intestinal symptoms, at the same time conserves the strength of the patient, led Finkelstein and Meyer to prepare a mixture which they call "Eiweiss Milch," consisting of casein and buttermilk. Heiman reports very favorable results from its use.

Archives of Ophthalmology, New York

July, XLI, No. 4, pp. 323-433

139 Treatment of the Early Stages of Senile Cataract. H. Smith, Ameitsar.
140 Two Cases of Epibulbar Sarcoma. C. Koller, New York.
141 Trachoma Question. K. Lindner.
142 Simple Flap Extraction of Senile Cataract with Peripheric Incision of the Iris. A. Elschnig, Prague.
143 Remarks on Elschnig's Article on Cataract Extraction. C. Hess.
144 Size of the Blind Spot and Its Distance from the Point of Fixation in the Emmetropic Eye. J. Van der Hoeve, Utrecht, Holland.
145 Retinal Lipemia in Severe Diabetes. C. R. Darling, Chicago.
146 Metastatic Inflammations of the Eye in Gonorrhea. E. Sidler-Hugenin, Zurich.

Medical Record, New York

August 17, LXXXII, No. 7, pp. 277-322

147 *Diagnostic Significance of Abnormally Quick Fatigue (Apocamnosis) of Orbicularis Oris Muscle. J. L. Corning, New York.
148 Case of Dental Developmental Anomalies, with Cyst Formation. C. K. Austin, Paris, France.
149 Surgery of Hypophysis with Special Reference to Endo-Nasal Method of Hirsch. I. W. Voorhees, New York.
150 *Additional Note on So-called Parasite of Yellow Fever (Seidelin). A. Agramonte, Havana, Cuba.
151 Bullous Dermatitis Following Vaccination, with Report of Case. J. L. Kirby-Smith, Jacksonville, Fla.
152 Marked Case of Facial Asymmetry Occurring in Case of Scrofuloderma. M. Zigler, New York.
153 Case of Sarcoma of Orbit. D. Webster, New York.
154 Cellulitis of Orbit. F. P. Hoover, Jacksonville, Fla.

147. Abnormally Quick Fatigue of Orbicularis Oris Muscle.—In a number of individuals examined by Corning the endurance of the orbicularis oris was found to be decidedly below normal; at least this was true of those instances of depression (melancholia) in which the somatic symptoms were at all prominent. The same phenomenon was observed to follow the exhibition of large doses of alcohol and the bromids, the amount of the latter being sufficient to cause pronounced mental hebetude. A like effect also occurs some time after the inhalation of ether, and this despite the fact that the subject has sufficiently recovered from the anesthetic to stand and even walk. Incidentally, it is remarked that the vacuous expression of the face so frequently met with in typhoid, due, as it is, to relaxation (hypotonicity) of the facial muscles, coincides with pronounced loss of endurance of the ring muscle

of the mouth. Finally, in the diffuse meningoencephalitis of paresis, loss of endurance of the ring muscle of the mouth is met with rather early.

Corning believes that general conditions that tend to lessen the energy of the cerebrum as a whole and of its cortical (motor) neurons in particular will express themselves rather more promptly in the muscles of the face than in other parts of the motor system. The kinetic condition of the orbicularis oris, he regards as indicative of that of the other facial muscles. The voluntary and involuntary mechanisms of expression, while structurally independent, are both amenable to the general influences, so that the degree of endurance disclosed by the orbicularis oris, when voluntarily contracted in the manner previously set forth, may serve as an index of the efficiency of innervation of that muscle, and hence of the other muscles of expression, when, under emotional incitement, the latter are involuntarily (reflexly) contracted. In emotional depression, especially when somatic symptoms are a marked feature, loss of endurance of the ring muscle of the mouth is a sign of some importance.

150. **Parasite of Yellow Fever.**—Agramonte believes that he has demonstrated that the "parasites" of yellow fever said to have been contained in the stained slides shown by Seidelin cannot be accepted as such, from the fact that evidently blood-platelets, chromatin residues, desintegrating cell remnants, nuclear and protoplasmic fragments often present the same hue and outline when treated by the selective stains and principally by the Giemsa reagent.

Mississippi Medical Monthly, Vicksburg

August, XVII, No. 4, pp. 67-88

155 Infant Feeding. M. Caraway, Gulfport.
156 Medical Ethics. G. W. Wallace, Arbj.

Journal of Medical Society of New Jersey, Orange

August, IX, No. 3, pp. 109-166

157 Vaccine Therapy. G. K. Dickinson, Jersey City.
158 Physician and Eugenics. T. W. Harvey, Orange.
159 Prolapsus Uteri and Its Operative Treatment. V. Parsonett, Newark.
160 Acute Anterior Poliomyelitis. C. M. Williams, Washington.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest

Lancet, London

August 3, II, No. 4640, pp. 283-350

1 Integration of the "Social Organism." Sir T. C. Allbutt.
2 *Cases Illustrating Value of Examination of Blood. E. H. Shaw.
3 Municipal Dispensary and Tuberculin Treatment. A. M. Fraser and H. Clark.
4 *Treatmeat of Habitual Dislocation of Shoulder-Joint. E. D. Telford.
5 Syphilitic Sera. C. Russ.
6 Case of Merycism. J. D'Ewart.
7 Cerebral Tumor Presenting Unusual "Crossed Reflex." E. B. Gunson.

2. **Value of Examination of Blood.**—In cases of puerperal sepsis blood-cultures, Shaw says, will give definite evidence of the presence of septicemia. He has examined a large number of cases of puerperal fever and found actual septicemia present in quite a small proportion. Cases which have presented all the appearances of a blood-infection have given varying results, some positive and the great majority negative. Very alarming symptoms may be present without the presence of organisms in the blood. It is a source of great relief to find septicemia absent in such patients, and a good prognosis can be given. In septicemic cases the organism found is nearly always the *Streptococcus brevis*. Shaw usually also makes cultivations from the cervix and finds that this organism is a common one in this region. Failing to find organisms in the blood, he always uses those obtained from the cervix for the preparation of a vaccine and has had good results from this form of treatment.

4. **Treatment of Habitual Dislocation of Shoulder-Joint.**—Two cases are cited by Telford in which he operated as follows: With the arm abducted to a right angle, a curved incision some 7 to 8 inches in length is made in the line of the anterior fold of the axilla. The incision follows the lower border of the greater pectoral, and is continued for some distance down the arm along the inner border of the coracobrachialis muscle. The lower edge of the pectoral is defined and retracted upward and inward. The interval between the packet of axillary vessels and nerves and the coracobrachialis is at once apparent. The vessels and nerves are gently retracted inward, and the coracobrachialis is drawn outward. In this maneuver the anterior circumflex artery will probably need division, and the separation, in a downward direction, of the fibers of the coracobrachialis muscle will obviate harmful traction on the musculocutaneous nerve. If the arm be now rotated outward and the head of the humerus thrust forward, the subscapularis tendon is seen in the floor of the interspace between the neurovascular packet and the coracobrachialis. If the subscapularis be now in part divided and in part retracted the underlying capsule is exposed. A large oval piece, measuring 1¼ inch by ½ inch, is easily removed, and through the opening thus formed the interior of the joint is readily inspected and explored for any loose body or other abnormality. The long axis of the ellipse lies across the capsule at right angles to its fibers. The opening is closed by sutures of formaldehyd catgut, and the incision in the subscapularis tendon is repaired by a second layer of sutures. The insertion of sutures is much facilitated by inward rotation of the arm. The wound is then closed without drain. The operation by this route is almost bloodless, and in the second of Telford's cases it was not necessary to leave any ligature in the wound. The after-treatment consists in fixing the arm to the side for eight days, after which the sutures are removed, and both active and passive movements are begun in all directions excepting abduction. At the end of the third week movements of abduction are made, and within six weeks free movements of the shoulder should be possible in all directions.

British Medical Journal, London

August 3, II, No. 2692, pp. 213-284

8 Administrative Provisions for Prevention of Malingering. A. G. Gulian, M. Dewar and E. A. Browne.
9 Capitation Payment vs. Payment Per Attendance Under National Insurance Act. H. Harvey, P. R. Cooper, A. Steward and C. E. S. Flemming.

Practitioner, London

August, LXXXIX, No. 2, pp. 157-300

10 *Bone Grafting. A. E. Barker.
11 Adherent Pericardium. G. N. Pitt.
12 Two Clinical Lectures on More Serious Forms of Cardiac Valvular Disease. S. Taylor.
13 General Observations on Heart Disease. F. J. Poynton.
14 Sudden Strains and Injuries of Heart. H. Barber.
15 Treatment of Cardiac Cases by Nauheim Baths in Their Own Homes. R. T. Thorne.
16 Clinical Aspects of Abnormal Arterial Tension. T. B. Scott.
17 Tropical Diseases. R. T. Hewlett.
18 Recent Literature on Typhoid. C. B. Ker.
19 Relationship of Thyroid to Other Internal Secretions of Sexual Origin. H. E. Waller.
20 Importance of Early Diagnosis and Treatment of Pulmonary Tuberculosis. G. A. Wolfendale.

10. **Bone Grafting.**—Two cases of bone grafting are reported by Barker. The first case was a bad, compound, comminuted fracture of the tibia. Under antiseptic fomentations the conditions improved, and the wound decreased in size. To cleanse it further, and at the same time to improve the prospects of repair, it was congested with Bier's bandage daily for some hours. This produced a large outpouring of serum and a further cleansing of the wound, but no repair. The ends of the bones, which were pointed toward one another, were, therefore, exposed by a long incision, and the granulating material between them was scraped away. A long strip sawn from the front of the opposite tibia was now pressed into the medullary cavity of both ends. But in doing this some vein was torn and yielded a good deal of blood. To arrest this it was necessary to remove the graft, and in doing so its periosteum was stripped off. It was reinserted and all the wound healed, except the original small fistula, without reaction or any rise of temperature.

After a time, it was clear that the graft had died, and it was removed by enlarging the fistula. Some weeks later, Barker obtained 3½ inches of the tibia from a freshly

amputated limb to fill the same-sized gap, which had been left when the pointed fragments had been sawn off transversely. The hollow of the graft was filled by a portion of the fibula from the same amputated limb, and the projecting ends were inserted into the medullary cavities of the upper and lower fragments embedded in iodoform paste, which was also squeezed into the hollow of the graft. As the ends of all the fragments were now in line and well coapted, no stitches were necessary between them. The wound in the soft parts was closed without drainage and healed without reaction. Later, the small sinus opened again and continued to yield a little turbid serum. In this condition he remained for some months and then began to be desperately homesick. He began to plead for an amputation. And, as his wretched mental state seemed to demand it, Barker very reluctantly amputated the limb. But from the skiagrams taken just before, and from an examination of the seat of operation after amputation, it seems more than probable that with patience the bones would have ultimately been united by good bone. The graft was dead and eroded by the tissues around it. But there is also a large quantity of new bone around it, left by its removal, like a sleeve, which fuses above and below with new bone thrown out by the two ends of the patient's tibia.

The second case was one of ununited fractured tibia. Barker grafted the second metatarsal bone into the ununited ends as follows: A long vertical incision was made over the front of the tibia having the line of fracture in its middle. The ends were found in good position, and the wire of the previous operation was removed. The periosteum of both ends was divided in the direction of the skin incision and turned aside. Then, with a narrow gouge, he cut a groove in the end of each fragment in one line, deep enough to open the medullary cavity; this was packed with dry gauze for the moment. Barker then exarticulated the second metatarsal bone with its periosteum from the patient's own foot on the same side, trimmed off the articular cartilage at both ends with bone forceps, and placed it in a bowl of warm normal saline solution. The gauze packing was then removed from the slot cut in the ununited ends of the fractured bone, and the metatarsal bone was laid into it, half in the upper fragment and half in the lower, crossing, of course, the line of fracture which it bridged. The periosteum was drawn as far as possible over this central plug and stitched, and the soft parts closed over all without drainage. Primary union took place without a flaw. From time to time radiograms have been taken, and at first showed, of course, but little change. The metatarsal bone could be seen distinctly in the center of the fractured tibia bridging across the interval between the fragments. Then by degrees bone was seen growing from the edges.

Clinical Journal, London

July 17, XL, No. 15, pp. 225-240

21 Cardiac Failure. W. P. Herringham.
22 Treatment of Some Aural Affections. H. J. Davis.

July 24, XL, No. 16, pp. 241-256

23 Operative Treatment of Fractures of Long Bones. W. M. Eccles.
24 Diagnosis of Phthisis and Other Tuberculous Diseases. H. W. Gardner.
25 Clinical Demonstration of Disease in Children. J. H. Thursfield.

July 31, XL, No. 17, pp. 257-272

26 Hysteria and Its Relation to Mental Diseases. W. H. B. Stoddart.
27 Late Results of Suprapubic Prostatectomy for Simple Enlargement of Prostate. J. W. T. Walker.
28 Meningitis. A. M. Gossage.

Edinburgh Medical Journal

August, IX, No. 2, pp. 97-192

29 Some Memories of Old Harveians, with Notes on Their Orations. C. W. MacGillivray.
30 *Complete Absence of Vagina: Regurgitation of Menstrual Blood Through Fallopian Tube into Peritoneal Cavity; Unusual Case. W. Fordyce.
31 Care of Teeth in Relation to Health of Children at School Ages, Provision of Special School Dental Clinics. L. S. Shennan.
32 *Diagnosis of Disease of Stomach by Roentgen Rays. G. A. Pirie

30. **Complete Absence of Vagina.**—Fordyce cites the case of a young lady who previously had been quite strong and whose menstruation had always been normal. One day toward the end of a period, she was seized with acute abdominal pain, with great abdominal tenderness suggesting appendicitis, for which she underwent an immediate operation. The appendix was found to be normal, but there was a considerable quantity of blood in the lower abdomen, which was found to be oozing from the right fallopian tube. The diagnosis of a patent fallopian tube was made. The two succeeding periods were attended by pretty severe pain, but since then there has been no more than the ordinary discomfort. The fallopian tube was not removed. Fordyce suggests the possibility that some of the very severe cases of dysmenorrhea one occasionally comes across, where on examination everything seems to be normal, are due to a similar clause, or, if not to regurgitation of blood through the tube, then to an abnormal amount of blood getting into the peritoneum from the rupture of an unusually vascular Graafian follicle. He has repeatedly in abdominal work been surprised to find a considerable amount of blood in the pouch of Douglas. In these cases it has been noted that menstruation had just terminated. Blood effused into the peritoneal cavity seems to undergo a very rapid and complete absorption, leaving no trace of adhesions.

32. **Stomach Disease.**—According to Pirie a stomach that allows food to pass at once to its lowest point and gather there is atonic. Its greater curvature requires elevation by mechanical or surgical means. A stomach that is not empty in six hours has some obstruction at the pylorus. Gastro-enterostomy is indicated. But if that stomach is also atonic, gastro-enterostomy alone will do no good. If a functional hour-glass appearance is observed, the stomach has a small ulcer somewhere. If a true hour-glass appearance is seen, gastro-enterostomy must be done above the level of the constriction. If the gastric juice contains no acid (as shown by the bismuth cachet remaining undissolved), and there is the slightest irregularity of the stomach outline, carcinoma is present. Lastly, if indigestion resists medical and dietetic treatment for more than a month, a Roentgen-ray examination after a bismuth meal should be made. It is painless, not unpleasant, and capable of supplying important information about the stomach, its shape, position and functional activity.

Journal of Laryngology, Rhinology and Otology, London

August, XXVII, No. 8, pp. 409-464

33 *Favorable Influence of Rhinologic or Pharyngorhinologic Operations on Exophthalmos and Hypertrophy of the Thyroid. Contribution to Treatment of Exophthalmic Goiter. J. Sendziak.
34 Teaching of Otorhinolaryngology in France. G. Gelle.

33. **Treatment of Exophthalmic Goiter.**—Sendziak has personally observed six cases of undoubtedly favorable influence of the nasal or nasopharyngeal operations on the symptoms of exophthalmic goiter. He says that the favorable influence of the nasal therapeutic methods and operations in the course of this disease is shown in three principal ways: (1) The most striking is the influence of these operations on the ocular symptoms, especially on the exophthalmos with von Graefe's and Stellwag's symptoms. In these cases there is a striking improvement (diminution of the exophthalmos to 4 mm. Hoffmann), or even, as in three of his cases, a complete return to the normal. In two cases there was an immediate and striking difference in the appearance of the eye after the excision of adenoid vegetations or tonsillotomy (in only one case this difference took place on third day). (2) The favorable influence of nasal respiratory nasopharyngeal operation on the hypertrophy of thyroid (goiter). There has also been noted complete recovery from the goiter after nasal operations. (3) Finally, the favorable effect of these operations on the other symptoms of the disease (tachycardia, tremor, etc.). From the cases which he has collected from the literature, as well as from his own personal experience Sendziak maintains that in every case of exophthalmic goiter (with the characteristic "triad" of the symptoms, i. e., exophthalmos, goiter and tachycardia), or in the so-called *forme fruste*, i. e., without the ocular symptoms, finally, in simple vascular swelling (hypertrophy) of the thyroid (goiter), we must minutely examine the upper respiratory tract, especially the

nose and nasopharynx, and in the event of any pathologic changes being discovered, immediately submit them to the local treatment, namely operation.

Journal of Tropical Medicine and Hygiene, London

July 15, XV, No. 14, pp. 209-224

35 *Etiology of Vaccinia and Cultivation of Microbe of Variola. W. J. Simpson.

35. **Etiology of Vaccinia.**—From a buffalo suffering from a fatal attack of small-pox Simpson isolated a diplobacillus; from subsequent subcultures of this organism two calves were inoculated. From one calf thus inoculated, lymph was taken from a secondary vesicle, inserted into a third calf, and from the vesicle in the third calf children were successfully vaccinated and rendered immune to ordinary vaccine lymph. A similar success attended the inoculation of the second calf. This is a noteworthy and most important observation, being none other than a successful vaccination of children from the products of a culture of the contents of a small-pox-like disease in cattle. This experiment was further elaborated by retransferring the lymph from children to calves, then from calves to children again, as well as from children to children. Three months later a second series of experiments was carried out. With cultures from the lung, spleen and liver, three calves were inoculated with one of the cultures from each, respectively. The calf inoculated by cultures made from the lung died; the second (cultures from spleen) calf lived to develop secondary vesicles, lymph from which was transferred to another calf and from the vesicles on this calf lymph was taken on the seventh day and inserted into children; the result was a successful vaccination of the children who resisted attempts to vaccinate them by ordinary vaccine lymph. Many other experiments were made by Simpson, all showing the capability of successful vaccination by cultures made from cattle suffering from cattle diseases, passing under several names, such as rinderpest, gotee (small-pox), etc. Simpson has also shown that it is possible to produce vaccine by the passage of human small-pox virus through the cow, and that children could be successfully vaccinated from this source.

Medical Press and Circular, London

July 17, XCIV, No. 3819, pp. 49-72

36 *Treatment of Dyspepsia. W. H. Willcox.
37 Arthritis Deformans and Purin-Free Diet. J. S. K. Smith.
38 Clinical Significance of Acidosis in Pregnancy. W. C. Swayne.
39 Submucous Resection of Nasal Septum: Analysis of 130 Cases. D. McKenzie.

July 24, XCIV, No. 3820, pp. 73-98

40 Tracheotomy. M. Wicart.
41 Appendicitis. J. J. Clarke.
42 Case of Heroin Habit. J. O. Symes.
43 Psychogenesis and Internal Secretions: Experimental Data and Pathogenesis. T. A. Williams.
44 Acute Shedding of Hair in Certain Circulatory Disorders. D. Walsh.

July 31, XCIV, No. 3821, pp. 99-124

45 Treatment of Decubitus. A. Zweig.
46 Medical Aspects of Eugenics. A. F. Tredgold.

36. **Treatment of Dyspepsia.**—In treating patients with chronic gastritis, Willcox says careful attention should be paid to the condition of the mouth and teeth. If the symptoms are severe, rest in bed for about a fortnight is advisable and during this period gastric lavage can be carried out daily. Citrated milk or peptonized milk may be given, 5 oz., every two hours for the first three days. Then junket, lightly boiled, or poached eggs, clear soups, or jellies may be given in addition. When the patient gets up, his diet should be carefully regulated, and only plain, easily digestible food allowed at first, such as fish, boiled chicken, tripe, sweetbreads, toast, rusks, thin milk pudding, etc. Alcohol should be avoided, and smoking must be prohibited. As regards medical treatment, a mixture such as the following may be given:

℞	gm.	or	c.c.
Liquoris strychninæ	2		3 ♏
Acidi hydrochlorici dil.....	92		14 ♏
Tincturæ aurantii	2		½ ʒ
Glycerita pepsinæ	4	or	1 ʒ
Spiritus chloroformi	66		10 ♏
Aquam ad 30			1 ʒ

Sig.: t. d. s., p. c.

In hyperacidity, rest, either in bed or on a couch, is advisable. The diet should be easily digestible, and citrated milk, or milk containing 1 dr. of bicarbonate of soda to the pint, should be freely given. A mixture,

℞	gm.	or	c.c.
Bismuthi carbonatis	66		10 gr.
Magnesii carbonatis	66	or	10 gr.
Sodii bicarbonatis 2	6		40 gr.
Aquæ chloroformi ad.....30			1 ʒ

should be given one hour after meals. In some cases the taking of olive oil, a tablespoonful before meals, is of value. The patient should avoid spiced foods, condiments of all kinds, also soups and meat extracts.

Chronic atonic dilatation of the stomach is best treated by rest in bed for a few days; the stomach may be thoroughly washed out and emptied at the commencement, and then the patient fed with citrated milk to which beaten-up eggs are added. An ounce of liquid may be given every hour for the first twenty-four hours, and the quantity of liquid only gradually increased. When the stomach has contracted down, light, easily digestible solids may be given; but big meals must always be avoided. It is well to avoid taking liquids with the meals; these may be taken either an hour before meals or between meals. Abdominal massage is of value, and a nerve tonic may be given.

℞	gm.	or	c.c.
Liquoris strychninæ	26		4 ♏
Tincturæ cardamoni comp.... 2			½ ʒ
Acidi hydrochlorici dil.....	66	or	10 ♏
Aquæ chloroformi ad.....30			1 ʒ

Sig.: t. d. s., p. c.

Annales de Gynécologie et d'Obstétrique, Paris

June, XXXIX, No. 7, pp. 321-384

47 Therapeutic Abortion in Tuberculosis. (De l'avortement soi-disant thérapeutique chez les femmes tuberculeuses.) A. Pinard.
48 Fixation of Uterus Interfering with Delivery. (Dystocie suite d'hystéropexie; opération césarienne et hystérectomie.) Fruhinsholz and G. Michel.
49 Toxemia or Bacteremia. Active Versus Expectant Treatment. R. Labusquiere.

Presse Médicale, Paris

July 10, XX, No. 56, pp. 585-592

50 *Successful Operative Treatment of Gastric Crises in Tabes. L. Maire and G. Parturier.
51 Soap Not Antiseptic. (Le pouvoir antiseptique du Savon.) M. Pilod.

50. **Operative Treatment of Gastric Crises in Tabes.**—Maire and Parturier report most excellent results from application of Franke's method of operative treatment in two cases of gastric crises. The relief from pain was immediate and has been permanent over four months to date. They discuss the comparative advantages of the Franke and Foerster operations, stating that the former is much simpler and seems to accomplish the purpose equally well. No one need hesitate, they say, to propose it to any tabetic whose gastric crises prove rebellious to medical measures. (The method was described in THE JOURNAL, Feb. 10, 1912, p. 446.)

Revue Médicale de la Suisse Romande, Geneva

May, XXXII, No. 5, pp. 337-420

52 Chorio-Epithelioma of Fallopian Tube; Eleventh Case on Record. (Etude du chorionépithéliome malin de la trompe.) L. Jeanneret.
53 *Lumbar Puncture. (La ponction lombaire.) A. Cramer.
54 *Early Diagnosis of Intestinal Tuberculous Processes in Course of Chronic Pulmonary Tuberculosis. Jaquerod.

53. **Lumbar Puncture.**—Cramer discusses whether this measure is really so harmless as generally accepted. He has found thirty-eight published cases of death in which a preceding lumbar puncture is incriminated. In all but ten cases there had been a tumor in the brain or cerebellum; in three others an aneurysm; in two others echinococcus disease or hydrocephalus; in two others uremia or tuberculous meningitis; and in one case epidemic meningitis. In his own experience the lumbar puncture was borne without reaction even when the patients had a tumor in brain or cerebellum verified at necropsy. Death did not occur until long after the lumbar

puncture. In two cases in his practice the needle broke in the spinal canal but this did not entail any serious consequences. Vertigo and swooning are rarely observed and only in very nervous frightened patients. Nausea is more common and headache is comparatively frequent. Pitres and Abadie regard headache as inevitable with lumbar puncture, but Cramer did not find it so constant, especially when only a moderate amount of fluid was withdrawn. Sicard advises keeping the patient in bed for forty-eight hours, the head scarcely raised, before lumbar puncture, particularly on suspicion of a brain tumor. The puncture should be made with the patient lying on his side, the head slightly lowered by raising the foot of the bed. This position should be maintained for from twelve to twenty-four hours, and then the foot of the bed should be lowered and the patient lie horizontal for another two days. Even with all these precautions, the puncture may prove fatal in case of a brain tumor, so it should not be ventured unless the symptoms actually compel it. Cramer reviews the technic, and interpretation of the findings. Widal says that the prognosis is inevitably fatal when the fluid contains over 2 per thousand albumin of urea.

54. **Intestinal Tuberculosis.**—Jaquerod witnessed the development of intestinal tuberculous processes in the course of chronic pulmonary tuberculosis in twenty cases, twice during the first stage of the lung process and fourteen times during the second stage. The first symptoms of the secondary intestinal affection were digestive disturbances. From eating with a good appetite, the patients began to be fitful in their appetite and complain of pain in the epigastrium; sometimes they vomited. The persistence of these digestive disturbances suggests serious trouble. He is inclined to regard these stomach symptoms as due to reflex action as they subsided entirely in the three cases in which the tuberculous intestinal lesion was excised. The latter, strange to say, does not at first induce any symptoms on the part of the bowels. Diarrhea as an early symptom is rare; constipation is more common. The stools are irregular, on some days very abundant. If large numbers of tubercle bacilli are found in the stools of a patient who is careful not to swallow his sputum, an intestinal lesion is almost certain. Spontaneous pain in the intestine is a comparatively late symptom but tenderness on palpation may be noted early although local tenderness may occur from other causes in intestines free from tuberculous involvement. The appendix is rarely the first site of this secondary intestinal tuberculosis, although it usually shares in an adjoining process. The peritoneum is seldom involved in this secondary intestinal tuberculosis, but the latter generally causes a characteristic and persistent fever with possibly a transient rise after meals, with normal temperature between 4 and 7 p. m. The course of a primary intestinal tuberculous process is slow and torpid; in two of his cases it healed spontaneously. Excision of the lesion often cures completely. The secondary intestinal process is entirely different; its course is acute and rapidly progressive. Jaquerod knows of no instance of a spontaneous cure, nor of a cure by medical means, but prompt operative treatment may and often does cure. The process generally begins in the ileocecal region and does not spread for some time.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXIII, No. 2, pp. 201-315. Last indexed July 13, p. 151

55 Finkler's Methylene-Blue and Copper-Salt Treatment of Tuberculosis. (Ergebnisse des Finklerschen Heilverfahrens bei der Impftuberkulose des Meerschweines.) Gräfin v. Linden. (Meine Erfahrungen bei Lungentuberkulose mit Jod-Methylenblau und Kupferpräparaten.) E. Meissen. (Ditto bei äusserer Tuberkulose, speziell bei Lupus.) A. Strauss.

56 The Blood-Pressure in Pulmonary Tuberculosis. (Klinische Beobachtungen über das Verhalten des Blutdrucks während der Lungentuberkulose.) Schnitter.

57 "Iron Tuberculin" in Treatment of Pulmonary Tuberculosis. (Zur Behandlung der Lungentuberkulose mit Eisentuberkulin.) O. Amrein.

58 *Tubercle Bacilli in the Blood in Children. (Ueber das Vorkommen von Tuberkelbazillen im strömenden Blut bei Kindern.) K. Kennerknecht.

59 "Nerve Tabes." (Tabes nervosa; eine Krankengeschichte von 1819.) A. Pagenstecher.

60 *Percussion of the Apices in Early Diagnosis of Tuberculosis. (Die Ausmessung der Krönigschen Schallfelder und ihre klinische Bedeutung.) E. Ebstein.

61 *Pseudoleukemia. (Zur Aetiologie der Hodgkinschen Krankheit.) K. Beumelburg.

62 *Experiences With the Cutaneous Tuberculin Reaction. (Die Kutane Tuberkulinimpfung nach v. Pirquet: 800 Fälle.) H. Berberich.

No. 3, pp. 317-453

63 *The Suction-Mask in Treatment of Pulmonary Tuberculosis. (Klinische Erfahrungen mit der Lungen-Saugmaske bei 52 Fällen von Lungentuberkulose.) H. Berlin.

58. **Tubercle Bacilli in the Blood in Children.**—Kennerknecht examined the blood of 120 children at the Hamburg seaside sanatorium and found tubercle bacilli in 91 per cent. of the children. The proportion was 100 per cent. in sixty-eight cases of certain tuberculosis; 90 per cent. in twenty suspects, and 74 per cent. of thirty-one children who were being cared for on account of some other affection such as otitis, scoliosis adenoids, anemia, hysteria, asthma, eczema, etc., and were not suspected of tuberculosis. The direct determination of the bacilli in the blood is of the greatest diagnostic importance, being far more reliable and of earlier occurrence than the skin reactions. (Pirquet and Moro). The bacilli may be found in the blood at the very onset of infection, before any clinical symptoms have developed. The identity of the bacilli found was confirmed by inoculation of animals in certain cases. When tubercle bacilli circulate permanently in the blood, the possibility of transmission through the placenta is confirmed. In one of the animals tubercle bacilli were found in the placenta, liver and spleen of a previously dead fetus. Kennerknecht followed the Schnitter technic as modified by Kurashige; the latter found the bacilli in all of 155 persons examined, including forty-one in the incipient stage of tuberculosis.

60. **Clinical Estimation of the Percussion Findings.**—Ebstein has the handle of his percussion hammer marked off in fractioned centimeters, and with this he measures the areas of the physical findings. By this means he obtains an instructive oversight of the comparative findings in each apex.

61. **Pseudoleukemia.**—Beumelburg was able to detect Much's granula on post-mortem examination in five cases of Hodgkin's disease, in none of which had there been anything during life to suggest tuberculosis. The same findings are also reported from a case of Sternberg's tuberculosis of the lymphatic apparatus.

62. **The Cutaneous Tuberculin Reaction.**—Berberich reports the findings in 800 children tested with tuberculin by the Pirquet technic, as also other members of their families in many instances. The outcome confirms the great value of the test under the age of 3. After this age, the reaction is not so easy to interpret on account of possibly inactive tuberculosis. At any age a negative reaction with certain tuberculosis seems to be an unfavorable sign.

63. **Kuhn's Suction Mask in Treatment of Tuberculosis.**—Over 137 pages are devoted to the account of the application of the mask in fifty-two cases of pulmonary tuberculosis in various stages at the Cologne tuberculosis clinic. The mask was used over three months in the majority of the cases, the shortest period being three weeks and the longest over ten months. The sittings were fifteen minutes twice a day at first, increasing by the end of the week to an hour sitting twice a day and finally three times a day. The results were disappointing.

Berliner klinische Wochenschrift

July 15, XLIX, No. 29, pp. 1357-1404

64 *Effectual Modification of Leukemic Blood-Picture by Benzol. (Beeinflussung der Leukämie durch Benzol.) A. v. Koranyi.

65 *Palmin Test of Pancreas Functioning. R. Ehrmann.

66 Nodose Rheumatism. (Ueber den Rheumatismus nodosus mit bes. Berücksichtigung des pathologisch-anatomischen Befundes.) P. Frank.

67 Pregnancy After Artificial Fecundation; Six Cases. (Schwangerschaft nach künstlicher Befruchtung.) J. Hirsch.

68 *Summer Infant Mortality in Berlin, 1911. (Die Säuglingssterblichkeit in Berlin im Sommer 1911.) H. Liefmann and A. Lindemann.

69 *Pericranial Sinus. (Ueber Sinus pericranii.) A. Müller.

70 *Keeping Patients Under Influence of Scopolamin in Treatment of Morphin Addiction. (Die protrahierte Scopolaminnarkose bei der Morphiumentziehung.) A. Fromme.

71 Training Cripples to Be Self-Supporting. (Schule und Handwerksstuben des Krüppelheims in Verbindung mit der ärztlichen Tätigkeit.) W. Schasse.

72 Vaccine Therapy of Gonorrhea in Women. (Ueber die spezifische Behandlung der weiblichen Gonorrhöe.) A. Schmitt.

64. **Efficacy of Benzol in Leukemia.**—Koranyi has applied to practical use Barker's casual discovery that benzol (benzene, not benzin) has a destructive action on the blood; Barker encountered three cases of hemorrhagic purpura with aplastic anemia in three girls who worked with benzol in a factory. Two of the cases terminated fatally. Selling's experimental research has further established that benzol first increases the production of leukocytes and then has a destructive action on them, while the number of reds is not modified. At the same time the bone marrow, spleen and lymphatic apparatus show marked aplasia. This action of benzol is just what is needed in leukemia, and Koranyi reports a typical case to show the marked benefit which followed its systematic administration. This patient was a woman of 32 who noticed seven months ago that her spleen was enlarging; she became very weak and complained of pains in the sternum. The blood-count showed 3,100,000 reds and 220,000 whites, including 70 per cent. polynuclears and 16 per cent. myelocytes. An exposure to the Roentgen rays was made Feb. 1, 1912; two weeks later the benzol was commenced, giving from 3 to 4 gm. a day. By April the whites had dropped to 65,000 and by the middle of May to 8,000 and the general health showed marked improvement. The patient is now attending as usual to her household duties. There were no failures under the benzol treatment of chronic leukemia. The spleen subsides to normal size in time; the lymph-nodes seem to feel the influence less. The benefit is more gradual than from roentgenotherapy, but the benzol may succeed in cases in which the other has failed. Patients who have already had Roentgen treatment seem to respond more readily to the action of the benzol. No serious by-effects were observed from the benzol, not even in one case in which he gave up to 5 gm. a day, but some disagreeable effect was noted in some cases, a burning in the stomach, eructation, transient tracheobronchitis and dizziness. The stomach disturbances can be avoided by giving an equal amount of oil in a capsule along with the benzol. Koranyi has also applied the benzol in a case of polycythemia with enlarged spleen, and the benefit was encouraging. During the first week the reds increased from nine to ten millions but then dropped in the course of the next three weeks to 6,700,000. The patient then considered himself cured and has not been seen since.

65. **Copper Test for Pancreas Functioning.**—Ehrmann extols the simplicity, rapidity and convenience of the test described. It is based on the fact that a neutral fat, free from fat acids, is not split by anything but the fat-splitting ferment from the pancreas. Consequently, by addition of a stain which acts only on the fat acids, as they are split by the ferment, the presence of the latter is rendered evident. Commercial palmin has proved the most suitable neutral fat for the test. The patient takes a test-breakfast of 30 gm. of ordinary rice starch dissolved and warmed in a glass of water; a trace of salt is added and then 75 gm. of palmin, liquefied by heat, is stirred into it and the whole drunk from a glass. After two or two and a half hours the contents of the stomach are siphoned out and some is mixed in a test-tube with equal parts of a mixture of 90 parts petroleum benzin and benzol to 100 parts (Solution I). After the test-tube has been well shaken, the supernatant ether layer is decanted into a second test-tube and there mixed with an equal part of a 3 per cent. solution of copper acetate in distilled water (Solution II). The ethereal layer then assumes a bright green tint in proportion to the content in fat acids. If none has been split off from the palmin, owing to the absence of pancreas ferment, there is no color change in the fluid. The intensity of the change in tint is the index of the pancreatic ferment.

68. **Infant Mortality in Berlin During the Heat of 1911.**—This study of the mortality among infants last year is along the lines of that mentioned editorially in THE JOURNAL July 27, 1912, p. 281. The influence of the heat, of the food and of infection is discussed in detail, a preponderating rôle being ascribed to the heat either in its severest form as heat stroke or in its effect in reducing the child's tolerance for food and resisting powers against infection, so that bacteriemia and suppurative cutaneous affections are liable to develop.

69. **Pericranial Sinus.**—Müller reports the case of a girl of 13, otherwise normal, who had a small tumor in the region of the left parietal eminence. It had been noticed since childhood but had only lately begun to cause severe headaches. A cavity containing circulating blood communicated with the blood spaces of the inside of the skull; the tumor was easily removed. In this as in the various cases on record, which he reviews, the trouble seems to be some anomaly in the course of the vessels, possibly with a traumatic origin.

70. **Keeping the Patient Constantly Under the Influence of Scopolamin in Treating Morphin Addiction.**—Fromme injects the scopolamin systematically to keep the patient under its influence until all the symptoms caused by withdrawal of the morphin have subsided. Three or four days are generally enough, but seven or eight may be required in severe cases. No untoward by-effects are liable with proper management of the scopolamin; the dosage has to be calculated for each individual case. The morphin addict bears doses of scopolamin which would prove unconditionally fatal for any one else, Fromme asserts. The ordinary dose of scopolamin is under 0.002 gm., but he has given his morphin patients up to 0.015 gm. a day, without injury, and he has applied this prolonged scopolamin anesthesia in about 150 cases during the last year, and always with the best results and not the slightest untoward by-effects. The patients retain their wits sufficiently to attend to the calls of nature, but they must be kept continuously in bed. If the dose of scopolamin is too large, the patient is restless instead of drowsy. He warns that the nursing and care of the patient are of paramount importance in these cases.

Correspondenz-Blatt für Schweizer Aerzte, Basel

July 10, XLII, No. 20, pp. 729-776

73 Conservative Treatment of Tuberculous Lymphadenitis. (Konservative Behandlung der Drüsentuberkulose.) H. Iselin.
74 Case of Hematomyelia and Syringomyelia After Trauma. P. Wolfer.

Wiener klinische Wochenschrift, Vienna

July 11, XXV, No. 28, pp. 1071-1110

75 *Direct Sunlight in Treatment of Tuberculosis. (Die Sonnenbehandlung der Tuberkulose.) Rollier.
76 Physostigmin in Treatment of Tachycardia. R. Kaufmann.
77 Tuberculous Serositis With Clinical Picture of Banti's Disease. (Unter dem Bilde der Bantischen Krankheit verlaufene Tuberculosis serosarum.) A. Skutetzky.
78 Tolerance of the Eye for Foreign Bodies. (Zur Toleranz des Auges gegen Fremdkörper.) L. Szarvasy.

75. **Direct Sunlight in Treatment of Surgical Tuberculosis.**—Rollier here reviews his entire experience with 650 patients with surgical tuberculosis, who have been in his charge at Leysin since 1903. Of the total 450 cases of closed tuberculosis, 393 were cured and forty-one improved; only eleven can be regarded as stationary. Five of the patients in this group have died while under his care or since. Of the 200 patients with open tuberculous lesion, 137 are cured, twenty-nine improved; fourteen are stationary and twenty have died. This material is classified under various headings. Recurrence after supposed cure is known in only six cases, and three of these patients had concomitant pulmonary tuberculous lesions. The special details of the method as he has worked them out are related and various features of climate and exposures emphasized. (Compare with Hüssy's article summarized above.)

Zeitschrift für klinische Medizin, Berlin

LXXV, Nos. 5-6, pp. 367-518. Last indexed July 20, p. 235

79 Types of Regeneration and Degeneration of the Blood in Anemias. H. Pollitzer.
80 Measurements of the Intensity of the Heart-Sound. (Messung der Intensität des Herzschalles.) H. Goldschmidt.
81 Experimental Research on the Interrelations of the Glands With an Internal Secretion. I. (Experimentelle Beiträge zur Frage der Beziehungen der Drüsen mit innerer Sekretion zueinander.) M. Georgopulos.
82 Elimination of Glucuronic Acid. (Zur Glykuronsäureausscheidung beim Menschen.) F. Conzen.
83 *Roentgenotherapy of Leukemia. (Zur Behandlung der Leukämie mit Röntgenstrahlen.) M. Nemenow.

84 Mushroom Poisoning With Lactic Acid and Increased Amino-Acids in the Urine. (2 tödlich verlaufene Fälle von Pilzvergiftung.) W. Frey.
85 Physiologic Arhythmia. E. Mosler.
86 Roentgenoscopic Diagnosis of Ulcerative Colitis. E. Stierlin.
87 *Permeability of the Meninges. (Untersuchungen über die Durchlässigkeit der Meningen für chemische Stoffe.) H. Rotky.
88 Transmissible Fowl Leukemia and Its Independence of Fowl Tuberculosis. (Uebertragbare Hühnerleukämie und ihre Unabhängigkeit von der Hühnertuberkulose.) H. Hirschfeld and M. Jacoby.
89 *Aortitis and Fever. P. M. Popoff.

83. Roentgenotherapy of Leukemia.—Nemenow reports eight cases and tabulates the metabolic and other findings in great detail in the four older cases. He explains the remarkable benefit from the exposures as due first to the action of the rays on the leukocytes and then on the lymphoid tissue of the blood-producing apparatus as the radiation is continued. But this does not explain the changes which become evident in the organs remote from the exposed area, the subsidence of the enlarged lymph-nodes and the changes at distant regions in the bone marrow—all this points to another factor, the action of some leukotoxin or leukolytic ferment or possibly cholin, which exerts an inhibiting influence on the excessive proliferation of the tissue in the blood-producing apparatus. His one patient with acute lymphatic leukemia was not benefited by the exposures and soon died. In three chronic cases the treatment has been applied too recently for definite conclusions. In the three older cases of chronic myelogenous leukemia marked improvement was obtained and what amounts to an actual cure in one very severe case.

87. Permeability of the Meninges for Drugs.—Rotky writes from the medical clinic at Prague in charge of von Jaksch to report extensive experiments in this line with eight different drugs. They were all refound in the urine, but only hexamethylenamin once, and one other drug a bromid were refound in the cerebrospinal fluid. Mercury, iodids and salicylates were never detected in the cerebrospinal fluid. The permeability of the meninges is thus more a property of the drug than of the meninges. The fluid was constantly free from bile pigments; even in this case of long-continued severe jaundice the cerebrospinal fluid was persistently limpid and colorless. Hexamethylenamin passed into the fluid with remarkable rapidity; in a case of tuberculous meningitis the drug was present in the urine an hour and a half after taking 2 gm., and in two hours after taking 3 gm., in a case of hypophysis tumor. As bromids seem to be able to substitute the chlorids in the tissues, the bromids occupy a place apart from other drugs, displaying at times an apparently special affinity for the tissues. When the meninges are injured by the toxic action of mercury, the salicylates and iodids, they are liable to permit their passage into the fluid, but not in therapeutic dosage.

89. Aortitis and Fever.—Popoff reports three cases of febrile aortitis and states that at the clinic in his charge at Moscow there were forty-eight cases of aorta disease in the last two years. Excluding the sixteen cases in which the trouble was the consequence of acute rheumatism, he found a history of syphilis in all but three of the thirty-two others.

Zeitschrift für Urologie, Berlin

July, VI, No. 7, pp. 541-620

90 *Fungus-Like Growth in the Bladder. (Ueber Malakoplakia vesicae urinariae.) M. Waldschmidt.
91 *Diagnosis of Ureter Fistulas. (Zur Diagnose der Harnleiterfisteln.) C. Adrian.
92 Combined Cystoscope, Lithotriptor and Evacuator. H. Young (Baltimore).
93 *Preneurotic Urine. Orlowski.

90. Malakoplakia of the Bladder.—Waldschmidt gives a colored plate to show the findings in the two cases previously reported by E. Fraenkel. A third case has come under his observation since and he has found records of necropsies in twenty others. Only one patient was a child, the others were all over 40. The protruding patches are generally scattered over the walls of the bladder and often have a depression in the center suggesting ulceration. They do not seem to cause symptoms until they become secondarily infected, generally with colon bacilli. Tuberculous processes in the bladder have never presented such a picture in Waldschmidt's experience, although in several of the above cases the patients were tuberculous. In eight of the total twenty-three not a trace of tuberculosis could be detected anywhere. After the excrescences become infected, the resulting cystitis runs a sluggish, torpid course.

91. Diagnosis of Ureter Fistulas.—Adrian's article is based on thirteen cases in most of which the minute fistula escaped detection by the routine methods. In two cases the fistula was congenital; in ten cases the fistula resulted from an abdominal operation and in two from a vaginal. An interval of six weeks to nearly three years had elapsed before he saw the patients after the first discovery of the drizzling urine. Cystoscopy with or without ingestion of a stain, failed him in several cases, and the findings with catheterization of the ureters were misleading in others. He consequently devised a new method which has proved reliable and instructive while the technic is comparatively simple. It is based on the fact that neutral red and phenolsulphonethalein in the test-tube and in the body vary in tint according to the reaction of the medium. By subcutaneous or intramuscular injection of one of these stains and filling the bladder with some medium which decolors the stain (a weak alkaline solution for the neutral red and an acid solution for the other), the difference in the tint of the urine from each ureter mouth will show which ureter is voiding all the urine into the bladder, and which is losing some on the way. The findings are rendered more prominent by receiving the urine from the suspected ureter into a tampon impregnated with some substance which shows up more vividly the color of the stain, an acid for neutral red and an alkali for the other stain.

93. The Urine Just Before Outbreak of a Neurosis.—Orlowski calls attention to the changes in the urine he has observed in patients on the verge of a nervous breakdown. The curve of acidity of the urine shows a different rise and fall, being lowest morning and night, contrary to the normal decline in the middle of the day. The phosphates also behave differently, and the indican content increases. Orlowski has been studying for years the behavior of indican in the blood in various conditions, and is convinced that the proportion of indican in the urine is an index of low vitality, relaxation of the body, especially of the nervous system. It is thus a practical index of impending nervous breakdown. Even healthy persons, when they feel languid and without much vitality, have indican in their urine transiently. Persons with the paradoxic acidity curve mentioned above often have abnormal proportions of indican in the urine.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 9, XXXIII, No. 82, pp. 849-856

94 Factors in Uremia. (Su alcuni fattori dell'uremia.) G. A. Pari.
95 Exophthalmic Goiter. (I gozzi esoftalmici.) Debove.

Policlinico, Rome

July, XIX, Medical Section No. 7, pp. 289-336

96 Case of Edema From Ascending Neuritis. F. Giannuli.
97 Syphilitic Nature of Various Syndromes of Diverse Localizations. (Su la natura sifilitica di sindromi morbose con varie localizzazioni.) L. Massini.
98 Metabolism in Pellagra. (Ricambio materielle nella pellagra.) L. Preti.
99 Improved Culture Medium for the Tubercle Bacillus. (Su di un terreno di cultura per lo sviluppo rapidissimo del bacillo tubercolare.) G. Valletti.

Riforma Medica, Naples

July 6, XXVIII, No. 27, pp. 731-756

100 Urine-Serodiagnosis of Tuberculosis. (Sulla diagnosi della tubercolosi col metodo di Marmorek.) V. de Bonis and G. Renga.
101 Total Destruction of Lenticular Nucleus Without Motor Aphasia. (Sopra un caso di lesione totale del nucleo lenticolare di sinistra senza afasia motoria.) U. Raggi.

Semana Medica, Buenos Aires

June 13, XIX, No. 24, pp. 1089-1136

102 Case of Polyserositis. (Cirrosis cardio-tuberculosa.) J. S. Picado.
103 Hygiene of Childbirth. A. Chueco.